

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. **Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).**

1. Name of Property

historic name Krebs Pigment & Chemical Corporation Building A-47

other names/site number N-12806.001

2. Location

street & number 205 South James Street not for publication

city or town Newport vicinity

state Delaware code DE county New Castle code 003 zip code 19804

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this 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 meets does not meet the National Register Criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Signature of certifying official/Title Date

_____ 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 of commenting or other official

_____ Date

_____ State or Federal agency and bureau

4. National Park Service Certification

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 the Keeper

Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply.)

<input checked="" type="checkbox"/>	private
<input type="checkbox"/>	public - Local
<input type="checkbox"/>	public - State
<input type="checkbox"/>	public - Federal

Category of Property
(Check only **one** box.)

<input checked="" type="checkbox"/>	building(s)
<input type="checkbox"/>	district
<input type="checkbox"/>	site
<input type="checkbox"/>	structure
<input type="checkbox"/>	object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
1	0	buildings
0	0	district
0	0	site
0	0	structure
0	0	object
1	0	Total

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

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions.)

COMMERCE/business

SCIENCE/research

Current Functions
(Enter categories from instructions.)

COMMERCE/business

SCIENCE/research

7. Description

Architectural Classification
(Enter categories from instructions.)

Neoclassical-Style

Materials
(Enter categories from instructions.)

foundation: concrete

walls: brick

roof: asphalt

other: _____

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Krebs Pigment & Color Corporation Building A-47

The Krebs Pigment & Color Corporation Building A-47 (CRS No. N-12806.001) is situated within the BASF Newport Plant complex in the Town of Newport, New Castle County, Delaware. Building A-47 is located along the west side of James Street, immediately northwest of BR 159 over the Christina River. A concrete sidewalk is set along the east elevation of the building. Water Street is north of Building A-47, along with the main entrance to the plant. The National Register Listed Joseph Tatnall House is west of the Building A-47 and is surrounded by a macadam pavement. The BASF Newport Plant is composed of over twenty-five industrial buildings and support facilities on an 8.84 acre parcel. The plant is bounded by James Street, to the east; Christina River, to the south; DuPont industrial operations, to the west; and Norfolk Southern railroad, to the north. Building A-47 was constructed in 1937 by the Krebs Pigment & Color Corporation as a research office. The office building was later utilized for sales and other administrative purposes. In 1950 a two-story annex, also referred to as Addition No. 2, was built along the south elevation of the original structure.

Narrative Description

The Krebs Pigment & Color Corporation Building A-47 is an example of a commercial/industrial style structure with elements of the Neoclassical-style applied to a commercial/industrial structure. The building is composed of three sections; a three-story office (1937), two-story office (1937), and two-story annex (1950). Building A-47 is a raised basement building. The main entrance is located within the original three-story section and faces north onto Water Street. A wrought iron fence encloses a landscaped lawn adjacent to the entrance. A sidewalk extends along the east elevation of the building, adjacent to James Street.

The three-story office section has a concrete foundation, brick veneer exterior, and flat roof. A flight of closed concrete stairs leads to the main entrance, located on the first floor. The main entrance is composed of paired glass doors, with a single-pane transom above, flanked by raised brick pilasters and capped by a concrete flat pediment. The first floor doorway opens into a central hall which is flanked on either side by offices of various dimensions. The fenestration along the façade is composed of one-over-one paired windows with aluminum sash. The windows on the basement-level are paired one-over-one windows with brick lentils. The façade includes several distinctive elements of the Neoclassical-style, including the concrete quoins and concrete cornice below the roof line. A concrete belt course separates the basement level and first floor. These elements embrace classical design, but are streamlined and incorporate modern materials. The west elevation of the three-story office is six-bays deep with a brick exterior and concrete foundation. The fenestration is composed of paired one-over-one windows with formed stone lintels and sills. A course of formed concrete block separates the ground and first floors. A metal staircase, with concrete bases and supported by metal posts, is located along the west elevation. The staircase provides access to a metal door on the third story. A formed stone course is set below the roof line and extends the length of the office. Two original window locations have been enclosed with brick. The infilled window on the third story now includes a modern metal door. The east elevation of the three-story office is six-bays deep with a brick exterior and concrete foundation. The fenestration is composed of paired one-over-one windows

with stone lintels and sills. A course of formed concrete block separates the ground and first floors. The basement level windows have iron gates attached.

The two-story office, situated between the three-story office and two-story annex, has a concrete foundation, brick veneer exterior, and flat roof. The two-story office is four rooms deep and includes a central hall which is flanked on either side by offices of various dimensions. The fenestration is composed of paired one-over-one windows with concrete lintels and sills. The first floor windows along the east elevation have iron gates attached. A belt course of formed concrete block separates the first and second floors. The structure features a concrete capped parapet, but lacks the decorative frieze found on the three-story office.

A two-story annex is located along the south elevation of the original office building. The annex is bounded by James Street, to the east; Christina River, to the south; and the BASF industrial complex, to the west. The annex was constructed in 1950 as an expansion of the research facility. The annex has a steel structural system, brick exterior, concrete foundation, and flat roof. The annex is an undistinguished, vernacular commercial structure with modest architectural detailing. The annex features rows of modern one-over-one windows with metal sash along the north and south elevations with formed stone sills. The west elevation of the annex includes metal doors on the first and second floors, but lacks any windows. A metal staircase leads from the ground level to the second floor door. The fenestration on the first floor of the north elevation of the annex consists of groupings of five and six one-over-one windows with metal sashes. A grouping of six one-over-one windows is found at the east end of the second floor of the north elevation. The south elevation is six bays in width. The fenestration on the first and second floors is composed of ribbon windows (groups of three, four, five, and six windows). A concrete sill extends the length of the windows along both the first and second floors. The fenestration is primarily one-over-one windows with aluminum sashes. Two groups of windows at the east end of the south elevation include sliding windows. There are no windows along the east elevation of the annex.

A single-story brick structure is located along the east elevation of the annex. The structure includes a concrete foundation, brick exterior, and concrete capped parapet a top a flat roof. An exhaust fan appears to have been formerly attached to the structure. Windows are located along the south, east, and north elevations. Each window includes iron bars. The structure does not appear on the 1937 Sanborn Map of the plant and appears to have been constructed around the time of the annex's construction in 1950.

Building A-47 was constructed as a research laboratory facility in 1937. As noted above, in 1950 a two-story annex was built along the south elevation of the original structure. The building was built as a research laboratory and included office space and a boardroom. The interior of the 1937 building was constructed with a central corridor running the length of the building along the ground and first floors. Laboratory rooms and offices extended off from the central corridor. The interior of Building A-47 underwent alterations in 1983 and during the early 1990s to accommodate administrative staff.

The interior of the Krebs Chemical & Color Corporation Building A-47 has been occupied as research and administrative space since its construction. The building is composed of a three- and two-story original section and 1950 annex. In general, the office building consists of a central corridor floor plan. Office space is located along each side of the central corridor along the ground and first floors of both the original three- and two-story sections and the annex. The interior has undergone several alterations to accommodate operational changes and to improve

office conditions. Significant alterations were undertaken in 1969, 1983, and during the early 1990s. The building continues to serve as administrative offices for plant personnel.

The basement level/ground level of the original three- and two-story sections is composed of a central corridor with office space situated along both sides. The area historically functioned as a locker room and research area. A variety of building materials have been utilized along the basement level walls, including painted concrete block, plaster, and ceramic tiles. The flooring consists of ceramic tiles. In general, the office doors are wood paneled with heavy glass. There are fireproof steel doors at the exits.

The former research laboratories located at the east end of the annex's basement level feature ceramic tile walls and flooring. Insulated drop in panels have been installed as ceiling materials. The west end of the basement level/ground floor of the annex is currently unfinished. According to a company employee the room previously served as a cafeteria for employees, but it currently serves as storage. The room has exposed steel I beams supporting the structure. The floor is composed of an exposed concrete slab. The walls are sheathed in ceramic tiles. The ceiling is open with exposed steel support beams. The first floor of the annex has been extensively altered to accommodate its current use as office space.

The ground floor interior of Building A-47's three- and two-story sections has ceramic tile flooring, plaster walls and drop in ceiling panels. The interior wood paneled doors with half glazing open onto each individual office. Several offices include modern replacement doors. The first floor of the annex has carpeted floors, plaster coated walls, and drop in ceiling panels. Each office has a solid wood door.

A stairwell is located at the northeast corner of the annex. The stairwell door is composed of steel, fireproof construction. The stairwell features plaster wall, ceramic tile flooring at each landing, and protective rubber flooring on the steps. Steel handrails line the staircase.

The second floor of the original section of Building A-47 has been remodeled on several occasions to accommodate administrative and functional changes. Historically, the north end of the second floor served as a boardroom of the company. The south end of the second floor includes a central reception desk with a conference area. Offices are situated along the outside of the central reception area. The second floor features carpeted floors, plaster walls, and drop in ceiling panels. The office doors are wood paneled without windows. The former board room is located at the east end of the second floor. The room has been converted to a training and administrative area. The former board room has a carpeted floor, plaster walls, and drop in ceiling panels. Paired one-over-one windows are located along the north wall of the former board room.

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.)

- 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.
- 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.)

Property is:

- A Owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance

(Enter categories from instructions.)

COMMERCE

ARCHITECTURE

SCIENCE

Period of Significance

1937 - 1983

Significant Dates

1937

1950

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Krebs Chemical & Color Corporation

DuPont Company

Period of Significance (justification)

The period of significance for the Krebs Pigment & Color Corporation Building A-47 is 1937 to the present. The period of significance was developed to incorporate the construction and operation of the Krebs Pigment & Color Corporation. The building has functioned as an administrative and research facility since its construction in 1937 until 1983, when the company was sold by the DuPont Company.

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The Krebs Pigment & Color Corporation Building A-47 is recommended eligible for the National Register of Historic Places under Criterion A for its association with the chemical industry in the Town of Newport and Criterion C as a representative example of the Neoclassical-style applied to a commercial structure. The period of significance for the Krebs Pigment & Color Corporation Building A-47 is 1937 to 1983. The recommended boundary for the Krebs Pigment & Color Corporation Building A-47 encompasses the footprint of the structure, and includes the fenced lawn immediately adjacent to the main entrance.

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

Historically, the Krebs Pigment & Color Corporation Building A-47 was constructed as a research laboratory dedicated to titanium dioxide (TiO₂) on behalf of the Krebs Pigment & Color Corporation and E.I. DuPont de Nemours & Company. The building was later associated with Ciba-Geigy and BASF. The plant had a significant impact on the development and history of the Town of Newport throughout the twentieth and early twenty-first centuries. Building A-47 is closely associated with the chemical industry and its significant impact on the development and growth of the Town of Newport. The Krebs Pigment & Color Corporation Building A-47 is associated with the chemical industry in the Town of Newport and is recommended eligible for the National Register of Historic Places under Criterion A.

The Krebs Pigment & Color Corporation Building A-47 is not known to have been associated with any person or persons of local, state or national significance. The industrial complex was associated with Henrik Krebs, who established the company in Newport in 1901, and died in 1929. The Newport Plant was acquired by E.I. DuPont de Nemours & Company in 1929. Building A-47 was constructed during the ownership of the E.I. DuPont de Nemours & Company. The architect and builder/contractor of the building has not been conclusively established. The Krebs Pigment & Color Corporation Building A-47 is not recommended eligible under Criterion B.

The Krebs Pigment & Color Corporation Building A-47 is a representative example of early twentieth century commercial/industrial architecture with elements of the Neoclassical-style. The Krebs Pigment & Color Corporation Building A-47 retains the physical features that characterize the type, period, and method of construction of an early twentieth century Neoclassical-style office building despite changes to the interior. Building A-47 retains a strong degree of integrity of location, setting, design, workmanship, materials, feeling, and association. The Krebs Pigment & Color Corporation Building A-47 is recommended eligible for the National Register under Criterion C.

Archaeological investigations have not been conducted on the property; therefore, the resource's eligibility under Criterion D (potential to yield information important to history or prehistory) cannot be assessed at this time.

Krebs Pigment & Chemical Company

The Krebs Pigment & Chemical Company was established in 1901 by Henrik Krebs. Henrik Krebs was born in Denmark and immigrated to the United States in 1879. Henrik Johannes Krebs was born in June 27, 1847 in Lolland in Denmark. He was associated with several companies, including the Delaware Sugar Beet Company and Pusey & Jones Company, before he co-founded the Delaware Chemical Company in 1886. He became the superintendent of the Delaware Sugar Beet Factory. Krebs later joined the firm of Pusey & Jones Company and built the first ice plant in Wilmington, Delaware. In 1886, Krebs, Alfred Wagner (owner of the Delaware Sugar Beet Factory), and William G. Pennypacker founded the Delaware Chemical Company to manufacture ammonium. The Delaware Chemical Company later merged with several other companies to form the National Ammonia Company.

In 1901 Henrik Krebs formed the Krebs Pigment and Chemical Company and during 1902 established operations in Newport, Delaware. By the early twentieth century several industrial operations had been established in Newport. The site chosen for the plant was conveniently located along the Pennsylvania Railroad line (originally the PW&B Railroad), which provided access to Wilmington and Philadelphia. The factory site also benefited from its position along the Christina River, which allowed barges to transport raw materials to the plant. The plant manufactured a white zinc and barium-based pigment called lithopone which was utilized in paints, inks, paper, linoleum and other products.

The Krebs Pigment & Chemical Company became a leading manufacturer of lithopone in the United States. Lithopone is a white pigment used primarily in paints, but also for inks, leather, paper and linoleum. Lithopone was first developed during the 1870s as an alternative to lead carbonate, which had several drawbacks for commercial use including toxicity and poor weathering. Lithopone is an insoluble mixture of barium sulfate and zinc sulfide. Lithopone is produced through a filtration process followed by roasting at temperatures over 1,100° F. Lithopone was gradually replaced for use as a pigment by the introduction of titanium dioxide. Lithopone continued to be produced after the introduction of titanium dioxide in a variety of products, including water paint. Germany was the principal manufacturer of lithopone during the late nineteenth and early twentieth centuries, although several other European countries did manufacture the product. During the early twentieth century tariffs and import duties were initiated to stimulate the American lithopone industry¹. Germany continued to be a leading chemical exporter to the United States until World War I disrupted trade relations.

Prior to the Krebs Pigment & Chemical Company establishment at Newport in 1902, the primary manufacturers of lithopone in the United States during the nineteenth century had been N.Z. Graves of Philadelphia and Beckton Chemical Company (later known as Becton, Dickinson & Company) of Newark, New Jersey². Most lithopone was imported from Europe prior to the twentieth century, mostly from Germany. In 1904 there were approximately 27 workers at Krebs' Newport plant. In 1908, he built another new plant in Newport, Delaware³. During the early twentieth century the Krebs Pigment & Chemical Company had its raw materials shipped from Germany to Philadelphia. From Philadelphia, the company utilized rail and barges to ship

¹ Charles L. Uebele. *Paint Making and Color Grinding*. New York: The Trade Paper Publishing Company, 1913.

² Henrik Krebs. *What's Next?: Autobiography of H.J. Krebs. Industrial Development since 1850*. Philadelphia: J.B. Lippincott Company, 1926.

³ E.I. DuPont de Nemours & Company, Inc. (1956) "History of the Newport Plant." *Newport News (Newport, Delaware)*. pp. 1-8.

the materials to Newport. During the course of World War I the Krebs Pigment & Chemical Company faced a variety of challenges. The war resulted in difficulties obtaining raw materials, which formerly had come from Germany. The company organized the Krebs Mining Company in Cartersville, Georgia, to obtain the barites required for production⁴.

During the course of World War I, Krebs also expanded its sales department following the decision to no longer use the firm of Heller & Merz for sales and marketing. The firm of Heller & Merz of New York had acted as agents on behalf of Krebs Pigment & Chemical Company for many years and had close ties to the German chemical industry. The armed conflict between the United States and Germany hindered Heller & Merz's opportunities in the United States⁵.

In 1918 the management of the company passed to August Sonnin Krebs, son of Henrik. August Sonnin was a graduate of Cornell University with a degree in chemical engineering. After Henrik Krebs retired from the company in 1921 his son August Sonin Krebs took over as president. In June 1929 the Krebs Pigment & Chemical Company was sold to E.I. DuPont de Nemours & Company, Inc. for \$5.9 million. Henrik Krebs died on October 7, 1929 after a long illness.⁶

Lithopone production was the main operation of the Krebs' Newport Plant during the early twentieth century and continued until the mid-twentieth century at Newport. In 1926, 75 tons of lithopone was produced at the Krebs' Newport Plant. In 1929 Krebs produced 74,005 tons of lithopone. The company sales declined to 39,281 tons of lithopone in 1932, before rising slightly during the mid-1930s. The decline in production correlated with the general economic downturn caused by the Great Depression. The Krebs Pigment & Chemical Company continued production of lithopone throughout the 1930s and 1940s. The production of paints and pigments recovered during World War II recovered to meet military demands.

E.I. du Pont de Nemours and Company

During the early twentieth century the E.I. du Pont de Nemours Company (commonly referred to as the DuPont Company) resolved to diversify into chemical production. The company had been formed in 1802 to manufacture gunpowder. During the early twentieth century the company was compelled to break up its gunpowder and explosives business, which was viewed as a monopoly under the Sherman Antitrust Act. The DuPont Company was a leader in industrial research and established some of the nation's earliest and most important research laboratories.

The DuPont Company began the manufacturing of pigments and paints as part of its diversification efforts of the early twentieth century. In 1917 DuPont acquired the Harrison Brothers Paint Company, a prominent Philadelphia-area manufacturer of lithopone. The Harrison Brothers chemical company was a leader in paint mixing, solvent production, sulfuric acid production, and various processes based on the by-products. During the late 1920s DuPont acquired or merged with additional manufacturers, including the Grasselli Chemical Company and Krebs Pigment & Chemical Company of Newport, Delaware. DuPont acquired the Krebs Pigment & Chemical Company for \$5.9 million in June 1929. Through these acquisitions the DuPont Company became the largest manufacturer of lithopone in the United States.

⁴ Krebs, Henrik. *What next?: Autobiography of H.J. Krebs. Industrial developments since 1850*. Newport, Delaware: Henrik Krebs, 1926.

⁵ Mira Wilkins. *The History of foreign investment in the United States to 1914*. Cambridge, Mass.: Harvard College, 1989.

⁶ James Terry Whites. *The National cyclopaedia of American biography*, 1967.

During the nineteenth century the DuPont Company produced explosives, including gunpowder and dynamite. Research facilities were established as part of the explosives industry, including the laboratory at Gibbstown, New Jersey. The Gibbstown laboratory was a modest one-story frame structure. During the early twentieth century the DuPont Company began a systematic move away from its previous emphasis on dynamite and explosives toward greater production of chemicals, such as paints, pigments, etc. As a result, the company required new research facilities and would become a national leader in industrial research and development⁷.

In July 1902 E.I. DuPont Company opened the Eastern Laboratory at its dynamite plant in Gibbstown, N.J. This was the first organized laboratory established by the DuPont Company. The laboratory was named for the Eastern Dynamite Company and employed ten researchers. In 1903 the DuPont Company opened the Experimental Station, in Wilmington, Delaware. The Experimental Station was intended to conduct applied research for new or improved products and basic or fundamental research aimed at new knowledge. The 150-acre campus-style research facilities developed many of the innovative materials and products developed by DuPont, including: Neoprene, Nylon, Tyvek, Kevlar, and others. Currently, the campus retains thirty-five structures engaged in research and development. The structures include a small number from the early twentieth century, although the most (twenty buildings) date from the 1950s and 1960s. The campus has continued to renovate, modernize, and expand buildings throughout its operation. New buildings continued to be added during the 1980s and 1990s. The DuPont Company currently operates over 150 research and development facilities throughout the United States and the world⁸.

The Development Department was formed in 1903 and has operated as the company's research arm at the Experimental Station in Wilmington, Delaware. Centralized research at the DuPont Company resulted from the company's need to diversify its product base after its 1902 reorganization. In 1911 the Chemical Department was organized, and all company research came under its jurisdiction. By 1922 research had become decentralized with each manufacturing department having its own research division. This was conducted based on the belief that each department had a clear understanding of its goals and production. The Chemical Department's second director, Charles M. A. Stine, initiated a formal program of fundamental research in physical and organic chemistry, physics, and chemical engineering in 1928. In 1958 the department was renamed the Central Research Department.

Throughout the twentieth century the DuPont Company reorganized its pigments and chemical research units to adapt to changing markets, technological innovations, or reflect industry wide changes. The Krebs Pigment Department was organized in 1936 from the former Krebs Pigment and Chemical Company. The Krebs Pigment Department was reorganized as the Pigments Department in 1943 for administrative purposes. In 1978 the Chemicals, Dyes and Pigments Department was created by merging the former Pigments, Organic Chemicals and Industrial Chemicals Departments. In 1980 it was renamed the Chemicals and Pigment Department and assumed its current name in 1980. It was created by merging the former Pigments, Organic Chemicals and Industrial Chemicals Departments.

In 1911 the Chemical Department was organized, and all company research came under its jurisdiction. By 1922 research was decentralized with each manufacturing department having its

⁷ Chandler, Alfred D. *Shaping the Industrial Century: The Remarkable Story of the Evolution of the Modern Chemical and Pharmaceutical Industries*. Boston: Harvard University Press, 2005.

⁸ DuPont Company, Accessed March 1, 2012. http://www2.dupont.com/Phoenix_Heritage/en_US/index.html.

own research division, but all research remained based at the Experimental Station. The Chemical Department's second director, Charles M. A. Stine, initiated a formal program of fundamental research in physical and organic chemistry, physics, and chemical engineering in 1928. The Carothers Research Laboratory opened in 1938 and conducted research on textiles, including nylon and Dacron polyester fiber. The laboratory was dedicated on September 17, 1946 in honor of the late Dr. Wallace Hume Carothers.

During the mid-twentieth century E. I. du Pont de Nemours and Company undertook a major expansion of its research facilities to meet the needs of consumer demands of the post-World War II era. Much of this expansion was undertaken in the Wilmington, Delaware, area. During the 1950s the company constructed the Pioneering Research Laboratory, Carothers Research Laboratory, and other research facilities as part of its post-World War II expansion (Pioneering Research Laboratory 1951). In 1952 construction of the Chestnut Run Plaza was begun. The plaza was a multi-business research facility dedicated to applied technology and customer service. The plaza eventually included nineteen buildings. The Pioneering Research Laboratory was opened in 1950 and was part of a \$30 million expansion of the Experimental Station. The majority of research buildings exhibited elements common to the Modern style, including its lack of dependence upon historical precedents and embrace of new materials. Flat roofs, unornamented exteriors, and lack of decorative detailing were also common elements of the modern styles of the period⁹.

The Marshall Laboratory in Philadelphia, Pennsylvania, Pigment Sales Service Laboratory at Chestnut Run, and Nylon Research Laboratory at Wilmington were typical of DuPont Company facilities constructed during the 1950s. These buildings exhibited a sleek modern appearance that emphasized uniformity. Many of the early twentieth century research laboratory structures associated with the DuPont Company have been lost due to a variety of reasons, including expansion of facilities or removal due to safety concerns or modernization. In addition, many of the mid-twentieth century research laboratories associated with DuPont have been expanded and modernized, including buildings at the Experimental Station. Still others, including the Marshall Laboratory, have been demolished for redevelopment or other purposes.

DuPont conducts research in more than 150 locations around the world. The Foundation R&D Centers are comprehensive laboratory facilities and centers of research excellence in their scientific fields. The Regional R&D Centers are comprehensive laboratory facilities that conduct research across multiple fields and facilitate collaboration with partners in business, government, academia, and local communities. The Business R&D Centers include a wide range of business-specific development laboratories, technical service centers, and field agricultural breeding stations.

Krebs Pigment & Color Corporation

The DuPont Company acquired the Krebs Pigment & Chemical Company in 1929 as part of its efforts to consolidate its share of the lithopone market. In 1928 the DuPont Company and Grasselli Chemical Company, a major manufacturer of lithopone and other chemical productions, consolidated to further improve DuPont's interests in pigments and paint products. Grasselli and Krebs, as part of the E.I. DuPont de Nemours Company, coordinated their research efforts in lithopone production. During the late 1920s both companies began research into titanium pigments in response to increased production by other companies, notably the National Lead Company. During the late 1920s and early 1930s the National Lead Company's production

⁹ McAlester, Virginia and Lee McAlester. *A Field Guide to American Houses*. New York: Alfred A. Knopf, 1998.

of titanium paint, including Titanox, was viewed with great interest by the DuPont organization. The improved production of titanium paint was a direct challenge to lithopone, which was the principal product of the Krebs Pigment & Chemical Corporation. In response, DuPont sought to enter the titanium pigments market.

In 1930 the Pigment Division of Grasselli Chemical Company was formed to control paint sales for the various DuPont controlled companies, but the Krebs Pigment & Chemical Corporation remained independent of this arrangement. DuPont, Grasselli, and Krebs executives sought to improve efficiency and production of the pigment market. The officials debated the merits of consolidating production and research, or maintaining independence among its subsidiary units. On August 1, 1931 the Krebs Pigment & Color Corporation was formed by E.I. DuPont de Nemours & Company and Commercial Pigment Corporation. The merger of these two companies allowed the DuPont Company to enter into the titanium dioxide (TiO₂) field through patents owned by the Commercial Pigment Corporation. The Krebs Pigment & Color Corporation also gained control of the manufacture of paint previously managed through the Pigment Division of the Grasselli Chemical Company and continued with its own lithopone production¹⁰.

During the early 1930s research related to TiO₂ by the DuPont Company and its subsidiaries was conducted at a variety of locations. Laboratories were established at Philadelphia, Baltimore, Newport and Newark, Delaware. At Newport a two-story frame building was in use, but was considered unsafe and lacked space to conduct necessary research. Several options were entertained at Newport by company officials, including reuse of existing buildings at the site. Ultimately, it was decided that reuse of existing buildings could not achieve the goals of the research department. The expressed purpose of the new laboratory was to “allow consolidation of the research on extended titanium pigment.” The company intended to relocate the chemists working in Baltimore, Philadelphia, and Newark to the Newport location as a department focused primarily with extended TiO₂ pigments. The Krebs Corporation anticipated the need and potential for future expansion at its research laboratory during the planning stages. The site was developed to allow an annex to the south elevation of the laboratory.

The executives at DuPont and Krebs realized the advantages of titanium pigments over lithopone and adjusted company policies to aid in the transition away from lithopone. James Eliot Booge, technical director of the Krebs Pigment & Color Corporation, lobbied for an expansion into the field of extended pigments¹¹. A major component of that decision was the construction of the Research Laboratory (Building A-47) at Newport in 1937. The decision to construct a new research laboratory was the result of several existing conditions at Krebs and DuPont during the 1930s. The purpose of the new facility was to “allow concentration of the research on extended titanium pigment.” The lack of coordination and correlation of ongoing titanium pigment research was viewed as a severe deficiency by DuPont and Krebs officials. The companies acknowledged that there were no “Grade A” research facilities available in the field of titanium pigments and sought to correct the situation with the Newport laboratory¹². The DuPont Company originally expected the laboratory to be constructed in 1933, but various difficulties hindered the project until 1937.

¹⁰ Morris, H.H. “The History of the Krebs Pigment & Color Corporation.” On file at the Hagley Museum & Library, Wilmington, Delaware. Public Affairs Department: History File. [Brochure] [no date].

¹¹ Hounshell, David and John K Smith, Jr. *Science and Corporate Strategy: Du Pont R&D, 1902-1980*. New York, NY: Cambridge University Press, 1988.

¹² Appropriation Request, Project No. AK-7, July 11, 1932. On file at the Hagley Museum & Library, Wilmington, Delaware.

In 1934 the Krebs Pigment & Color Corporation became a wholly owned DuPont subsidiary, following the company's acquisition of the Commercial Pigment Corporation's interests in Krebs. The Krebs Chemical & Color Corporation had headquarters at 1007 Market Street in Wilmington, Delaware, and operated facilities in Baltimore, Maryland, Newark, New Jersey, Edge Moor, Delaware, and Newport, Delaware. As part of the organization of its company, DuPont placed Krebs Pigment & Color Corporation in its Krebs Pigments Department, which included various facilities and operations dedicated to pigment production. In 1942 DuPont dissolved Krebs Pigment & Color Corporation's assets and transferred them into the DuPont Company. Following its acquisition by the DuPont Company, Krebs Pigment & Color Corporation expanded its focus beyond lithopone and eventually became a manufacturer of a variety of chemicals.

As part of the expansion of research in the field of TiO₂ production included plans to construct a new laboratory at the Krebs plant in Newport, Delaware. On July 11, 1932 the Krebs Pigment & Chemical Company approved an appropriation for the construction of a new laboratory. The plan was approved by Carl Rupprecht, president of Krebs. In 1937 the Krebs Pigment & Color Corporation constructed Building A-47. The building was originally designated as the Research Laboratory for the plant. The building was constructed of two sections: a three-story office and two-story office. The 1937 Sanborn Insurance Company *Map of Newport, Delaware* notes Building A-47 as having been constructed with a steel structural system, concrete flooring, and brick exterior.

The original plan for the Research Laboratory at Newport was completed in July 1932. No architects or building contractors are referenced on the appropriation request. The cost estimates associated with the plan were developed by S.G. Knecht. The building was projected to cost \$28,160. The total anticipated cost, including laboratory equipment, landscaping, and other expenditures was \$55,030. The proposed laboratory was a two-story building measuring 48' X 66' X 32' with a full basement level. The laboratory was planned to have a steel structural system, concrete foundation, and brick exterior. The facility was proposed to include five laboratory rooms and an office on the first floor and three laboratory rooms and a general laboratory on the second floor. The basement level would include a shower and storage area¹³. In 1932 the Krebs Pigment & Color Corporation developed an appropriation request to fund the construction of a new research laboratory at the Newport, Delaware site. It was anticipated that construction would begin in August 1932, but this did not happen.

The Krebs Pigment & Color Corporation Building A-47 was designed and built in the Neoclassical-style. The Neoclassical style was a prominent architectural style in the United States between 1895 and 1950. The style was based upon the use and renewed interest in classical forms. The Chicago World's Fair of 1893 stimulated a renewed interest in the classical form in the United States. The Neoclassical style emphasized symmetry and embraced full-width porches and columns, including the use of full height pilasters. Roof treatments frequently included wide friezes beneath the cornice and the incorporation of classical design elements such as modillions and dentils. Window treatments likewise encouraged symmetry, often with paired or ribbon windows and use of decorative lentils¹⁴. The Neoclassical style was often utilized for banks and institutional buildings.

The original plans for the Newport Research Laboratory called for the building to be completed and occupied by the end of 1933. Evidently the company experienced significant delays which

¹³ Appropriation Request, Project No. AK-7, July 11, 1932. On file at the Hagley Museum & Library, Wilmington, Delaware.

¹⁴ Harris, Cyril M. *American Architecture: An Illustrated Encyclopedia*. New York: W.W. Norton & Company, 1998.

resulted in the laboratory not being constructed until 1937. The delay may have been associated with financial difficulties at the time. A significant change to the original design plan for the research laboratory was the decision to construct a two-story addition to the original design. Based upon the design and materials, the two-story addition was most likely constructed at the same time as the main three-story section. The two-story addition allowed additional research and office space.

In 1950 the company finalized plans to enlarge Building A-47 with the addition of an annex to the rear of the building. The need to expand research facilities at Building A-47 were incorporated into the original designs of the 1937 structure. The annex to Building A-47, known as the Chemical and Sales Division Building in 1950, cost approximately \$360,000. The purpose of the annex was to provide additional laboratory space in order to facilitate research activities¹⁵. The annex was attached at the south elevation of the two-story section of the 1937 building. The annex measured 111' X 47' X 57' X 48' and was bounded by the Christina River to the south. The ground floor of the annex consisted of laboratory offices extending off from a central hallway. The ground floor included six (6) laboratory rooms. Each laboratory room measured 19' X 19' 5". The ground floor also included an office with stenographer area, equipment room, and paint laboratory. The first floor consisted of six (6) laboratory offices that measured 19' X 19' 5". The first floor included two offices, stenographers station, restroom, storage, and a conference room¹⁶.

In 1937 Krebs Pigment & Chemical Corporation produced a variety of products, including Ti-Tint (tinted titanium oxide). The main market for lithopone and titanium oxide was the paint industry. The Grasselli and Krebs corporations continued to operate independently following their acquisition by DuPont. Eventually, the arrangement became problematic and efforts were undertaken to streamline research and production to avoid waste and repetition. There was competition between the two organizations to assume sole production of lithopone and control the future of titanium oxide products within the DuPont Company. The Krebs Pigment & Chemical Corporation, through the efforts of men like Zach Phelps and James Booge, eventually persuaded DuPont executives to consolidate lithopone production and titanium oxide research with Krebs. Lithopone production continued at Krebs' Newport and Newark plants, while the Grasselli plants in Philadelphia were closed. The Krebs' Baltimore plant would assume a prominent role in titanium oxide development and production.

In 1940 the Krebs Corporation products included lithopone, titanium dioxide, extended titanium pigment, leaded zinc oxide, alumina hydrate, and chemical dry colors. The main market for Krebs products were paint manufacturers. The Baltimore plant produced titanium dioxide, Newark, N.J. produced dry colors, Edge Moor, Delaware produced extended titanium, and Newport produced lithopone. By end of 1953 DuPont was no longer producing lithopone at its Newport plant.

Several individuals were influential in the operation of the Newport research laboratory during the 1930s through the 1950s. These individuals included James E. Booge, Charles Rupprecht, and Zack Phelps. In 1935 Charles H. Rupprecht was the general manager of the Krebs Corporation. He later served as president of Krebs. James Booge served in a variety of positions with Krebs and DuPont throughout the twentieth century. Zack Phelps was the assistant general manager at the Newport facility. In 1950 James E. Booge served as the Director Chemicals Division for DuPont.

¹⁵ E.I. DuPont de Nemours & Company, Inc. Newport News, Volume 8, Number 3, March 1950.

¹⁶ Newport Works Building A-47, Research Laboratory ~ Addition No. 2 Architectural Plans, 1950.

By the early 1950s the Newport Plant produced a variety of chemical products, including titanium metal, erifon (a flame proofing product), lithopone, and CPC. In 1950 the company employed 77 chemists and chemical engineers, 23 technical personnel, 69 additional staff were employed in the white pigments research department at Newport and Edge Moor, Delaware. Research activities focused on pigment titanium dioxide, other titanium pigments, lithopone, and new product development in non-pigment field, including titanium (Rand 1950: 115). In 1953 approximately 800 workers were employed at the Newport plant, with only sixty engaged in lithopone production. The company was concentrating on new products, including titanium metal production¹⁷. The Newport site then transitioned to manufacturing titanium dioxide as a paint pigment. DuPont also manufactured copper phthalocyanine (CPC), quinacridone (QA), chromium dioxide, high-purity silicon, and other organic and inorganic pigments¹⁸. In 1984 the Ciba-Geigy (now Ciba Specialty Chemicals) bought the pigment plant. In 2009 Ciba-Geigy was acquired by BASF, the current owners of the Newport plant. BASF continues pigment production operations at the Newport Plant.

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¹⁷ Journal-Every Evening, Wilmington, Delaware, Monday October 19, 1953

¹⁸ E.I. DuPont de Nemours & Company, Inc. Newport News, “Plant Open House,” October 20-21, 1950

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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 # _____
 recorded by Historic American Landscape Survey # _____

Primary location of additional data:

State Historic Preservation Office
 Other State agency
 Federal agency
 Local government
 University
 Other

Name of repository: _____

10. Geographical Data

Acreage of Property Less than one acre
(Do not include previously listed resource acreage.)

UTM References

(Place additional UTM references on a continuation sheet.)

1	<u>18</u>	<u>447775</u>	<u>4395866</u>	3	<u>18</u>	<u>447797</u>	<u>4395825</u>
	Zone	Easting	Northing		Zone	Easting	Northing
2	<u>18</u>	<u>447791</u>	<u>4395869</u>	4	<u>18</u>	<u>447755</u>	<u>4395819</u>
	Zone	Easting	Northing		Zone	Easting	Northing

Verbal Boundary Description (Describe the boundaries of the property.)

The recommended boundary for the Krebs Pigment & Color Corporation Building A-47 encompasses the physical footprint of the former research laboratory building and includes the fenced lawn immediately adjacent to the main entrance.

Boundary Justification (Explain why the boundaries were selected.)

The recommended boundary for the Krebs Pigment & Color Corporation Building A-47 was developed to incorporate the office building and exclude modern intrusions and development not associated with the 1937 building and 1950 annex. The boundary retains the fenced lawn immediately adjacent to the main entrance, which historically functioned as the entrance to the building.

11. Form Prepared By

name/title Charles A. Richmond, M.A./ architectural historian
organization McCormick Taylor, Inc. date March 24, 2013
street & number 5 Capital Drive, Suite 400 telephone 717-540-6040
city or town Harrisburg state PA zip code 17110

Additional Documentation

Submit the following items with the completed form:

- **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. Key all photographs to this map.
- **Continuation Sheets**
- **Additional items:** (Check with the SHPO or FPO for any additional items.)

Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 1: Krebs Pigment and Color Corporation Building A-47 at the intersection of East Water and James Streets; view looking south.

1 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 2: North elevation of Krebs Pigment and Color Corporation Building A-47; view looking south.

2 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 3: North and east elevations of Krebs Pigment and Color Corporation Building A-47; view looking southwest.

3 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 4: North and west elevations of Krebs Pigment and Color Corporation Building A-47; view looking southeast.

4 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 5: East elevation of the Krebs Pigment and Color Corporation Building A-47; view looking northwest.

5 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 6: West elevation of the Krebs Pigment and Color Corporation Building A-47; view looking northeast.

6 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 7: East elevation of Krebs Pigment and Color Corporation Building A-47, note the later additions to the main block; view looking northwest.

7 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 8: West elevation of the main block Krebs Pigment and Color Corporation Building A-47 with later addition; view looking south.

8 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 9: South elevation of later addition to the Krebs Pigment and Color Corporation Building A-47 with later addition; view looking southwest.

9 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: February 1, 2012

Description of Photograph(s) and number: Photograph 10: North and west elevations of addition to the Krebs Pigment and Color Corporation Building A-47; view looking east.

10 of 15.

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: January 29, 2013

Description of Photograph(s) and number: Photograph 11: Interior view looking east along main corridor toward main entrance.

11 of 15

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: January 29, 2013

Description of Photograph(s) and number: Photograph 12: Interior view looking west from east end of the basement level corridor.

12 of 15

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: January 29, 2013

Description of Photograph(s) and number: Photograph 13: Interior view of office located on the basement level, in the southwest corner of the main building.

13 of 15

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: January 29, 2013

Description of Photograph(s) and number: Photograph 14: View looking east at basement level of the 1950 annex.

14 of 15

Name of Property: Krebs Pigment & Chemical Corporation Building A-47 (N12806.001)

City or Vicinity: Newport

County: New Castle

State: Delaware

Photographer: Charles Richmond

Date Photographed: January 29, 2013

Description of Photograph(s) and number: Photograph 15: Interior view of the first floor corridor of the 1950 annex, looking northwest.

15 of 15

Property Owner:

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

name BASF Corporation
street & number 205 South James Street telephone 302-992-5600
city or town Newport state Delaware zip code 19804

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

United States Department of the Interior
National Park Service

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Krebs Pigment & Color Corporation
Name of Property
New Castle County, Delaware
County and State
n/a
Name of multiple listing (if applicable)

Section number Figures Page 1

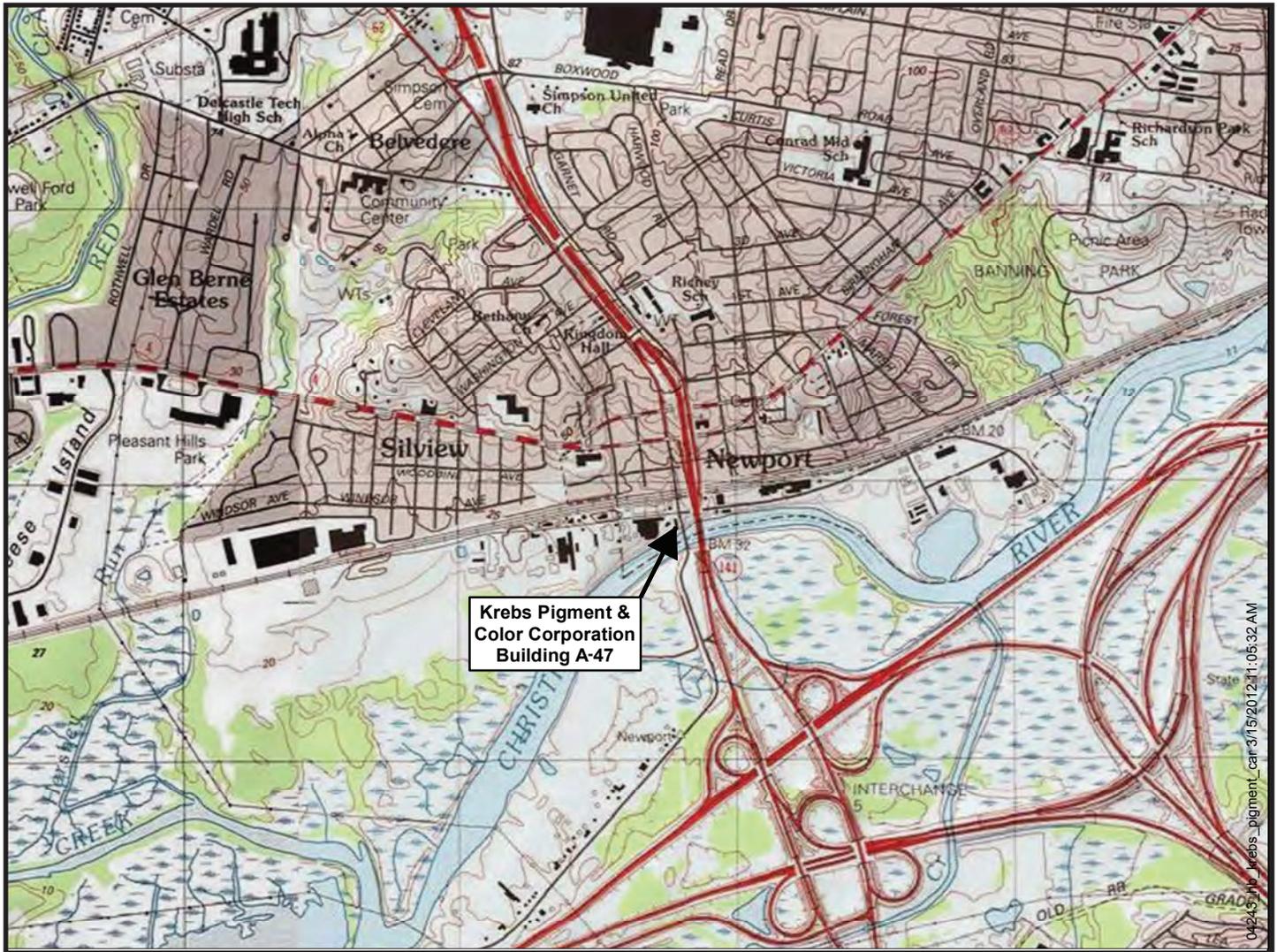


Figure 1: Wilmington South, DE 7.5' USGS Quadrangle Map, 1993

04245100 Krebs_pigment_car 3/15/2012 11:05:32 AM

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Figure 2: Krebs Pigment & Chemical Corporation Building A-47

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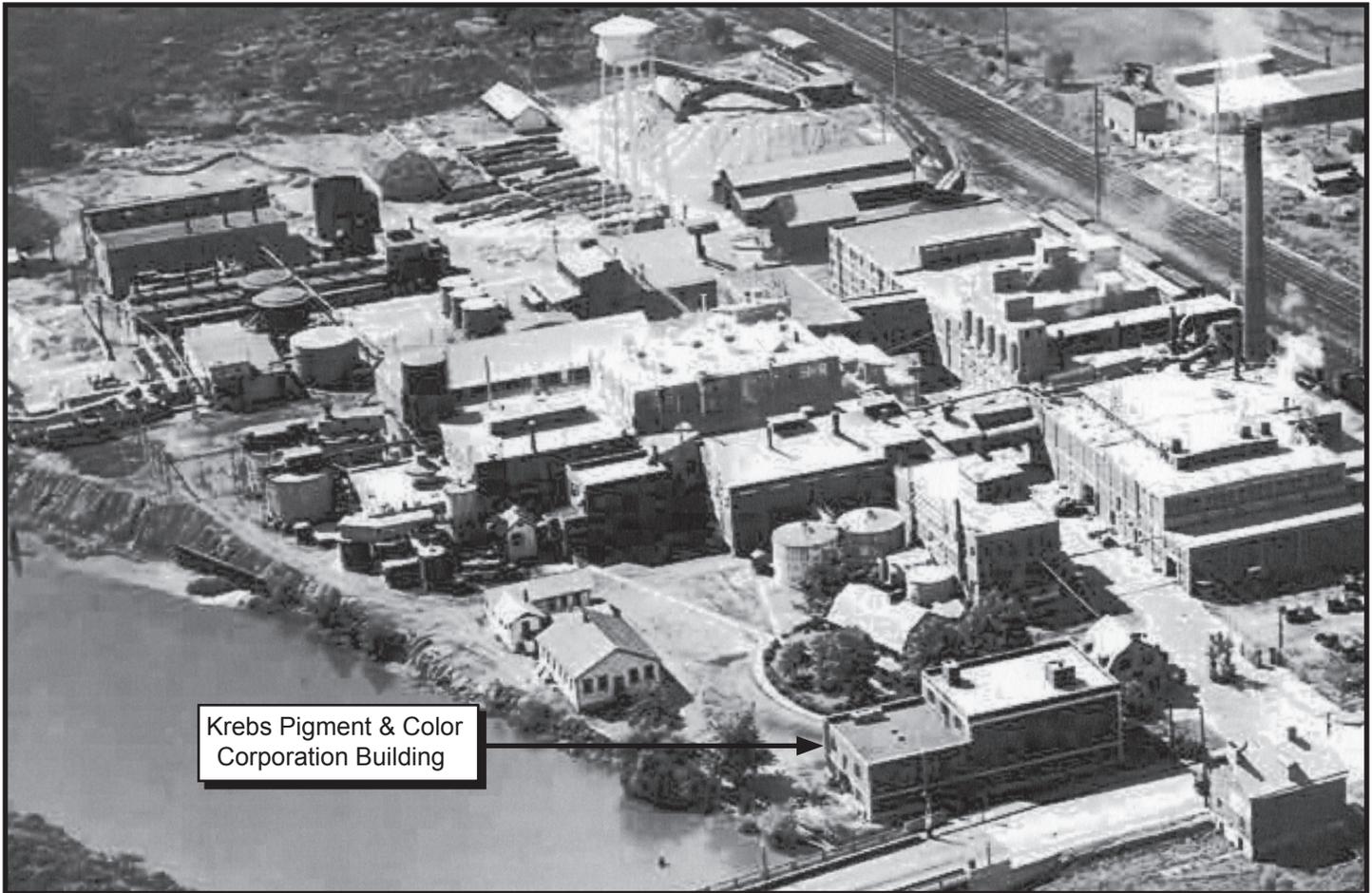


Figure 4: Aerial View of Krebs Pigment & Color Corporation, ca. 1940

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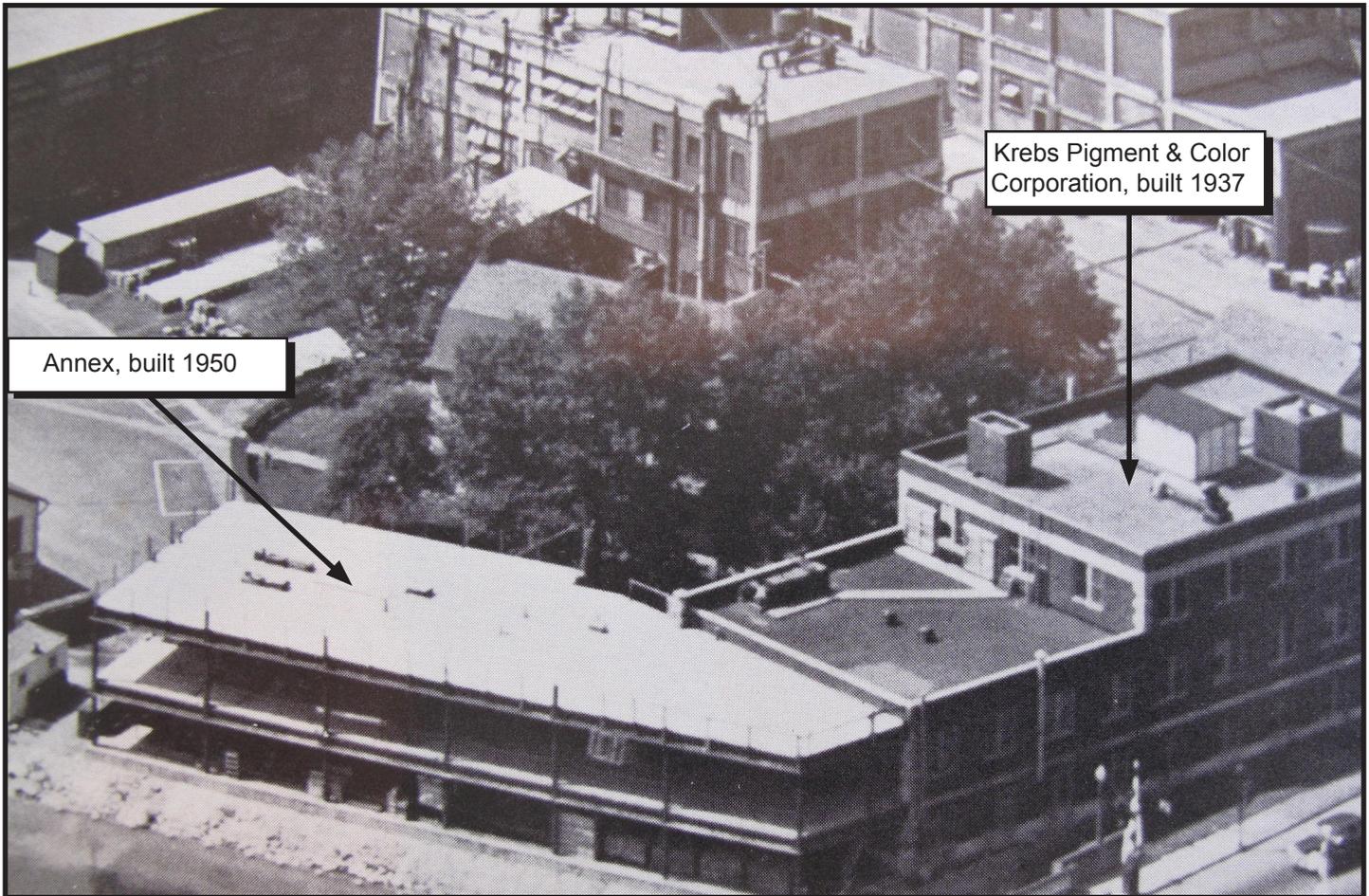


Figure 5: Aerial View of Krebs Pigment & Color Corporation, 1950

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Krebs Pigment & Color Corporation
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Section number photographs Page 1

Photographs

Photographer: Charles Richmond
McCormick Taylor, Inc.
5 Capital Drive, Suite 400
Harrisburg, Pennsylvania 17110

Date of Photographs: 1-10, February 2012; 11-16, January 29, 2013

Photograph 1: Krebs Pigment and Color Corporation Building A-47 at the intersection of East Water and James Streets; view looking south.

Photograph 2: North elevation of Krebs Pigment and Color Corporation Building A-47; view looking south.

Photograph 3: North and east elevations of Krebs Pigment and Color Corporation Building A-47; view looking southwest.

Photograph 4: North and west elevations of Krebs Pigment and Color Corporation Building A-47; view looking southeast.

Photograph 5: East elevation of the Krebs Pigment and Color Corporation Building A-47; view looking northwest.

Photograph 6: West elevation of the Krebs Pigment and Color Corporation Building A-47; view looking northeast.

Photograph 7: East elevation of Krebs Pigment and Color Corporation Building A-47, note the later additions to the main block; view looking northwest.

Photograph 8: West elevation of the main block Krebs Pigment and Color Corporation Building A-47 with later addition; view looking south.

Photograph 9: South elevation of later addition to the Krebs Pigment and Color Corporation Building A-47 with later addition; view looking southwest.

Photograph 10: North and west elevations of addition to the Krebs Pigment and Color Corporation Building A-47; view looking east.

Photograph 11: Interior view looking east along main corridor toward main entrance.

Photograph 12: Interior view looking west from east end of the basement level corridor.

Photograph 13: Interior view of office located on the basement level, in the southwest corner of the main building.

Photograph 14: View looking east at basement level of the 1950 annex.

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Photograph 1



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Photograph 3



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Photograph 5



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Photograph 7



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Photograph 9



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Photograph 11



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New Castle County, Delaware
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Photograph 13

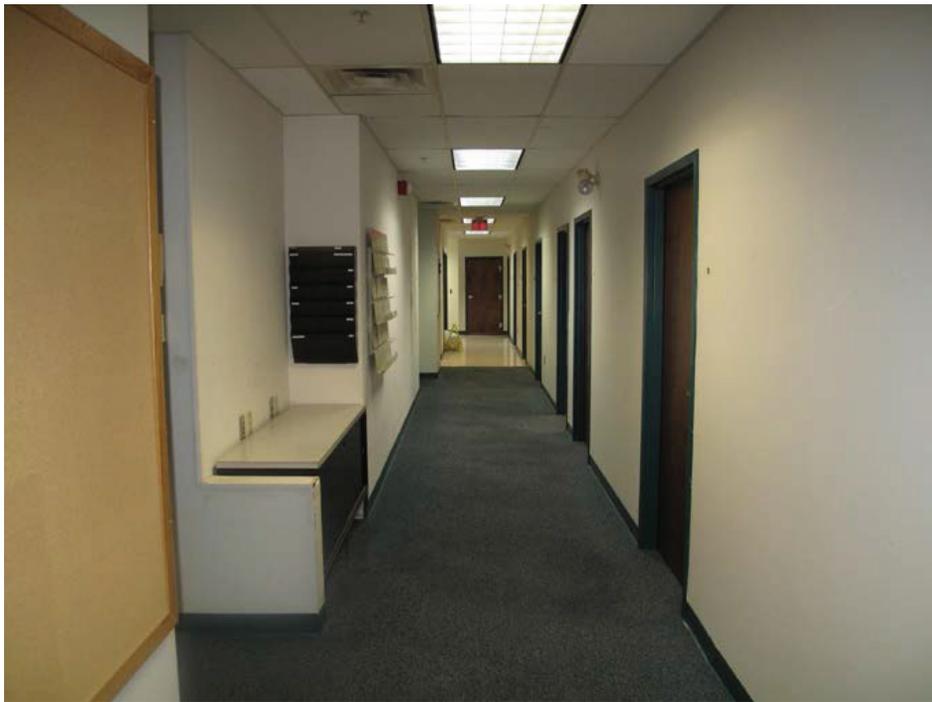


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Krebs Pigment & Color Corporation
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Section number photographs Page 9



Photograph 15

