NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

2150

United States Department of the Interior
National Park Service

NOV 20 1989

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Otranto Plantation Indigo Vats

other names/site number

2. Location

street & number SC Sec Rd 503 at entrance to Mobay Corp. [ ] not for publication

city, town Goose Creek [x] vicinity

state South Carolina code SC county Berkeley code 015 zip code 29411

3. Classification

Ownership of Property
- [x] private
- [ ] public-local
- [ ] public-State
- [ ] public-Federal

Category of Property
- [ ] building(s)
- [ ] district
- [ ] site
- [x] structure
- [ ] object

Number of Resources within Property

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1	0	Total

Name of related multiple property listing: N/A

Number of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this [x] nomination [ ] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property [x] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Mary W. Edmonds 11/8/89

Signature of certifying official Date

Mary W. Edmonds, Deputy SHPO, SC Department of Archives & History

State or Federal agency and bureau

In my opinion, the property [ ] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of commenting or other official Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

- [x] 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:)

Entered in the National Register

Delores Byers 12/21/89

for Signature of the Keeper Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)

Industry/Processing/Extraction: Manufacturing Facility

Current Functions (enter categories from instructions)

Recreation & Culture: Monument/ Marker

7. Description

Architectural Classification (enter categories from instructions)

N/A

Materials (enter categories from instructions)

foundation Brick
walls Brick
roof
other

Describe present and historic physical appearance.

The indigo dyestuff vats at Mobay Corporation's plant site consist of a pair of attached brick vats placed end-to-end; one vat is elevated slightly above the other. Each vat measures approximately 14' square and has a stuccoed interior. The upper vat, known as the steeper vat, was used for the fermentation of indigo plants. The liquor produced by this process was drawn from the steeper through a small portal into the "beater vat" below. The liquor was agitated in this vat and allowed to settle. Water was drawn off exposing a sludge which was strained, molded into cakes, and dried.

The brick is common and is similar in size and color to the "Charleston gray" brick found throughout the area. Laid in English bond with unadorned mortar joints, the walls taper slightly as the structure rises and average approximately 2' thick and 4' high. The interior floor and walls of each vat are covered with stucco. Simple brick arches form portals at the bottom of each vat which were used to drain liquor or water from each. Simple wooden locks slide vertically in an integral track within the brickwork and can be raised to allow liquid to flow from the vat and lowered to hold liquid in the vat.

The vats were originally located on nearby Otranto Plantation and were relocated to the present site in order to prevent their demolition. Each vat was disassembled in large segments, some weighing several tons, moved and precisely reassembled. A small concrete platform was constructed adjacent to the rear of the upper vat with no loss of historic fabric to allow viewing access.

The vats' original setting had been compromised by residential encroachments in the years just prior to their relocation and retained little integrity. Subsequent residential development has now destroyed the site. At the time of the relocation the site retained three sets of vats, two of which were severely deteriorated and could not be moved. The site was heavily overgrown with trees and other foliage.

The vats are presently located in a wooded area outside the entrance to an industrial facility. A small landscaped park, lying between two surface parking lots, surrounds the structure.

☐ See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

☐ nationally ☒ statewide ☐ locally

Applicable National Register Criteria ☒ A ☐ B ☒ C ☐ D

Criteria Considerations (Exceptions) ☐ A ☒ B ☐ C ☐ D ☐ E ☐ F ☐ G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Industry	c. 1760 - c. 1800	
Economics		

Cultural Affiliation

N/A

Significant Person

Architect/Builder

Unknown

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The Otranto Plantation Indigo Vats, located at Mobay Corporation's plant site near Goose Creek, South Carolina, are the only such structures known to be in existence in the state. The processing of indigo, for use as a dye primarily for textiles, became the state's second-largest industry in the last half of the eighteenth century. Although grown in the colony from its earliest period of permanent white settlement, the first commercial processing of indigo did not take place until 1745-1748.(1) Within a few short years, largely as a result of a bounty paid to the producers of indigo by the English government, indigo became an important supplement to South Carolina's economy. The Revolutionary War removed England as the primary market for American indigo, brought an end to the English bounties, and production all but ceased, only to be re-established briefly after the war's end until about 1800. Extracting indigo occurred in a series of vats in which fermentation and settlement processes were accomplished. The indigo dyestuff vats at Mobay Corporation's plant site are a significant physical reminder of the eighteenth century indigo manufacturing industry in South Carolina, the method of its production, and its importance to the economic history of the state.

Criterion A: The production of indigo in South Carolina is an important element of the state's economic and industrial history. These indigo dyestuff vats are the only known surviving examples of such structures and are significant for their ability to illustrate the indigo manufacturing process as it existed in the state in the late eighteenth century.

Criterion C: Constructed of brick, these vats are typical of the type of vat systems that were constructed for the processing of indigo in South Carolina from about 1745 to 1800. They are significant as the only known examples of such structures in South Carolina.

Criteria Exception B: These vats were relocated to their present site in 1979 in an effort to save them from demolition as part of the construction of a private housing development. The Verona Chemical Company, now Mobay Corporation, being a major dye manufacturing company, recognized the

☒ See continuation sheet

9. Major Bibliographical References

See continuation sheet

[x] See continuation sheet

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 # _____

Primary location of additional data:
- [x] State historic preservation office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Specify repository: SC Department of Archives & History Columbia, SC

10. Geographical Data

Acreage of property Less than one acre

UTM References

	Zone	Easting	Northing
A	17	599750	3649810
B			
C			
D			

[ ] See continuation sheet

Verbal Boundary Description

The boundary of the nomination is shown as the indicated point on the accompanying Berkeley County Tax Map, # 246-00-00, Parcel 3, drawn at a scale of 1" = 400'.

[ ] See continuation sheet

Boundary Justification

The nominated property includes only the actual footprint of the indigo vats and measures approximately 14' x 28'.

[ ] See continuation sheet

11. Form Prepared By

name/title David B. Schneider

organization Preservation Consultants, Inc. date 25 March 1988

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★U.S.GPO:1988-0-223-918

historical significance of the vats, purchased them, and, in a technically complicated and expensive effort, relocated them to their plant site near Goose Creek. The vats were dismantled in large sections in an effort to preserve their overall structural integrity and were precisely reassembled. The company has since donated the vats to the Berkeley County Historical Society for use as a public display commemorating the production of indigo in South Carolina.

As rare industrial structures, the vats' primary significance lies in their design, construction, and ability to illustrate the process of dye manufacture in America in the eighteenth century. This process had few site-specific requirements and, other than the loss of their original setting at Otranto Plantation, the integrity of the vats has not been substantially compromised by their relocation. Originally one of three sets of vats located on the Otranto property, these vats were the only ones which had enough structural integrity to be moved. The other two sets of vats have since been destroyed as part of a housing development.

These vats illustrate the indigo production process and are the most substantial physical reminder of this important element of South Carolina's economic history known to survive. Through their current use as a display by the Berkeley County Historical Society, the vats provide a tangible link to this important historical industrial process. The vats are available to the general public and therefore serve as an important educational tool for the community and the state. The vats, as reassembled, retain the overall integrity of their design, materials, workmanship, and feeling. As an example of an important eighteenth century manufacturing process, the vats are significant in terms of the history of industry and economics in South Carolina.

Industry

Prior to the creation of synthetic dyes in the nineteenth century, blue dye was produced through a process which extracted natural pigment from indigo plants. Utilized primarily in the textile industry, dyes were an important manufactured good in the seventeenth and eighteenth centuries. Although grown in South Carolina by its earliest permanent settlers, the manufacture of indigo did not become a major industry until the 1740s.

Indigo was first brought to South Carolina from Barbados in 1669 by Joseph West, who planted a small patch of the plant the following year.(2) Maurice Matthews wrote Lord Ashley, one of the colony's Lords Proprietors, in 1672 that he had developed a small indigo crop but that he was going to use it for its seed since there was little or no indigo elsewhere in the

colony.(3) By the end of the decade, indigo production had become more commonplace. The Lords Proprietors soon began allowing the public receiver to accept indigo dye as payment for rents and the South Carolina Assembly passed an act encouraging the production of indigo, wine, and salt in 1694.(4) Even with these measures, the production of indigo remained relatively unattractive due mainly to unsophisticated growing and processing techniques which made the product inferior to French indigo and therefore unmarketable.(5)

Miss Eliza Lucas, later the wife of Charles Pinckney, Chief Justice of South Carolina, and mother of Charles Cotesworth Pinckney, a Revolutionary War hero, is generally credited with developing the techniques by which large-scale indigo production in South Carolina was made possible. Lucas managed three plantations in South Carolina for her father, George Lucas, who was governor of Antigua. Eliza's interest in botany included the collection of plants for her Charleston friend, Dr. Alexander Garden, and the receipt of seeds from her father which she experimented with on his plantation on Wappoo Creek.(6) In 1741 or 1742, Miss Lucas first planted indigo seeds which she had received from her father. This first crop was destroyed by frost; a subsequent crop was destroyed by worms. The third crop, however, was successful and Lucas' father soon employed a French indigo maker, named Cromwell, to assist his daughter.(7) Cromwell, apparently not wishing to betray his native island of Monserat, which held a virtual monopoly on indigo production to that time, purposely produced inferior dye and sought to keep the process secret from Miss Lucas. She was observant enough to detect Cromwell's deception and in the following years was able to refine her techniques to the point where the production of marketable South Carolina indigo was possible.(8)

Indigo production quickly became popular both because of a bounty that was paid by the English government for indigo produced in its colonies and because of the desire by planters to diversify their crops to reduce their dependence on rice as a primary source of income. Within a few years, indigo production was South Carolina's second largest industry. Indigo production in the colony occurred primarily along the coast and along the Santee, Pee Dee, Black, and Savannah Rivers.(9) Indigo was also produced in Georgia, Florida, and Louisiana.(10) Even though South Carolina indigo was considered to be of inferior quality when compared to indigo produced by Florida and Louisiana, South Carolina produced most of the indigo exported from the colonies prior to the Revolutionary War.(11) Due to the loss of England as a market during the war, the indigo industry in South Carolina was all but abandoned only to resurface for a short while after the war.

The history of indigo production at Otranto Plantation is undocumented. Otranto was laid out as a 1780-acre plantation for Edward and Arthur Middleton in 1678. Arthur resided on the plantation, originally called Yeshoe, after acquiring his brother's interest in the property in 1680. Upon Middleton's death about 1685, the property passed to his widow and later, after her death in 1696, to her subsequent husband Ralph Izard. Izard in turn sold the property to Jacob Allen, whose son Obadiah sold the property to Benjamin Godin, a wealthy Charleston merchant, in 1721. Godin willed the property to his son David in 1748; David willed it to his brother Isaac in 1755, and Isaac sold it to John Moultrie in 1758. Moultrie resided at the plantation until 1771 when he sold it to Dr. Alexander Garden, a wealthy doctor and noted botanist from Charleston. Garden transferred the plantation to his son in 1778, who retained it until 1798. The name Otranto is first associated with the property in a 1785 sale of a small tract of the property.(12) The design of the indigo vats at Otranto is similar to contemporary descriptions of such structures that are found during the period from 1745 until the Revolutionary War. The survival of three sets of vats on the plantation prior to the relocation of the existing set indicates that they were used for commercial production which was largely discontinued after the war and virtually ended by 1800.

Economics

Coastal South Carolina's economy between 1720 and 1740 was principally centered on the production of rice.(13) In 1739, the War of Jenkins' Ear, between England and France, resulted in a substantial loss of market for much of South Carolina's rice production. The resultant drop in prices had a major impact on the colony's economy, as it had no other major income source to which to turn. In addition, cloth manufacturers in England were forced to purchase their indigo dye from France, as the French were its only major producers.(14)

Indigo was exported from South Carolina for the first time in 1747.(15) In that year 134,118 pounds of indigo left Charleston, mostly bound for England.(16) The English Parliament, seeing a way to cease importing indigo from France, passed an act in 1748 that provided bounties for indigo production by English plantations in America.(17) The bounty program was successful, and when coupled with the desire of many Carolina planters to diversify their crops, resulted in the substantial growth of the industry. Indigo production was also popular with Low Country planters since it was possible to grow both rice and indigo on the same plantation.(18)

Within a few years production techniques had been refined to the point where South Carolina indigo was marketable to other countries besides England.(19) By 1774, exports of indigo from South Carolina reached 1,122,218 pounds.(20) Very little indigo was shipped during the Revolutionary War, as England had been the principal market for the product. After the war, production resumed though it would never reach its earlier proportions. By comparison, an average of only about 217,000 pounds were shipped in the years following the war.(21) By the end of the eighteenth century, indigo production had developed in the East Indies to the point where, when coupled with the loss of the English bounty for production in America, it could be sold far more cheaply than Carolina indigo.(22) The result was that by 1800, production had declined to the point where only 3,400 pounds were exported.(23) Cotton gained popularity as a replacement crop for indigo, and, after 1800, very little commercial production of indigo took place in South Carolina and was mostly restricted to Orangeburg County.

Processing

The manufacture of indigo involved a relatively simple fermentation process. Indigo plants were cut down in full bloom in late June or early July and were immediately placed in the first of two vats for processing. The steeper, or fermenting vat, was typically about 16' square and 2 1/2' deep. Indigo was placed in the bottom of the vat and held in place with wooden planks. The vat was flooded with water, allowing fermentation to take place within twelve to fifteen hours. Once fermentation was complete, a cock was opened allowing the liquor produced to drain off into a second vat, called the beater vat. This vat was typically about 12' x 10' in size and 4 1/2' deep. The liquor was beaten in this vat for approximately ten to fifteen minutes. Beating generally utilized slave labor and involved the use of poles, often with wooden boxes drilled full of holes attached, or water-mill type devices.(24) Lime water was added, often from a third vat called the lime vat, to precipitate sediment. Additional beating occurred and the mixture was left to settle for six to eight hours. The water was drawn off, the sludge was strained to remove imperfections, and the resulting material fashioned into small cakes and left to dry.(25)

The design and construction methods of the vats used to extract dye from indigo appears to have varied, based to a large degree on the size of the operation. Eliza Lucas wrote in her letter book that Cromwell had "made some brick vats on my Father's plantation on Wapoo Creek."(26) In an article in the South Carolina Gazette of 23 December 1745, an unnamed author described his vats: "They are made of Brick: The Steeper is Ten

Feet by Nine in the clear, and Four Feet and an half deep, three Courses of Brick thick in the Bottom, and the sides a Brick and a half thick. The Battery is Nine Feet by Seven in the clear, Four and a half Feet deep, and the Floor and Sides of the same Thickness as the Steeper. . . . The Plastering is made of Brick Dust very fine powder'd, and equal Quality of the best Lime . . ."(27) Charles Hill is known to have built "five sets of indigo vats and a lime vat" in the late 1740s or early 1750s.(28) Other sources suggest that wooden vats were also used, cypress or pine being the common material.(29) A 1770 engraving shows a system of three vats: a rotting vat, a beating vat, and a drying room with a water source attached by means of a small aqueduct.(30)

These indigo dyestuff vats consist of a steeper vat and a beater vat constructed of brick, with stuccoed interiors. The vats are similar in size and design to those described in historic accounts of eighteenth century indigo processing in South Carolina. A 1928 reference to the vats stated, "there are on this property the remains of an old indigo vat one of the few indigo vats constructed of brick in the Province."(31) Although the earlier references typically cite brick vats, there appears to be no reason why wood could not be substituted for it and wood may have commonly been used on smaller plantations.

NOTES

(1) Lewis Cecil Gray, History of Agriculture in the Southern United States to 1860 (Gloucester, MA: Peter Smith, 1958), p. 291.

(2) Leila Sellers, Charleston Business on the Eve of the Revolution (Chapel Hill: University of North Carolina Press, 1934), p. 161.

(3) "Indigo," American Dyestuff Reporter (March 1975), 38.

(4) Sellers, p. 161.

(5) Ibid.

(6) "Indigo," 38.

(7) David Ramsay, Ramsay's History of South Carolina (Newberry: W.J. Duffie, 1858; Reprint Edition, Spartanburg: The Reprint Company, 1962), p. 118.

(8) Sellers, p. 161.

(9) John J. Winberry, "Reputation of Carolina Indigo," South Carolina Historical Magazine 80, 243.

(10) Gray, p. 294.

(11) Winberry, 243-250.

(12) Henry A.M. Smith, "Goose Creek," South Carolina Historical and Genealogical Magazine 29:1 (January 1928), 20-24.

(13) Dwight Jackson Huneycutt, "The Economics of the Indigo Industry in South Carolina," Unpublished M.A. thesis, University of South Carolina, 1949, p. 7.

(14) J.E. Copenhaver, "Culture of Indigo in the Provinces of South Carolina and Georgia," Industrial and Engineering Chemistry (1 August 1930), 895.

(15) Huneycutt, pp. 4-5.

(16) Ibid.

(17) Ramsay, p. 119.

(18) Sellers, p. 163.

(19) Ramsay, p. 119.

(20) Huneycutt, pp. 4-5.

(21) Ibid.

(22) Ramsay, p. 119.

(23) Huneycutt, pp. 4-5.

(24) H. Roy Merrens, The Colonial South Carolina Scene (Columbia: University of South Carolina Press, 1977), p. 156.

(25) Huneycutt, pp. 4-5; Ramsay, p. 119.

(26) Smith, 20-24.

(27) Huneycutt, pp. 13-15; "Of the Cultivation and Manufacture of Indigo," South Carolina Gazette, 23 December 1745.

(28) "Indigo," 38.

(29) Copenhaver, p. 895.

(30) "Manufacture of Indigo in South Carolina, 1770," Engraving, South Carolina Historical Society, Charleston, South Carolina.

(31) Smith, p. 25.

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Huneycutt, Dwight Jackson. "The Economics of the Indigo Industry in Carolina." Unpublished M.A. thesis, University of South Carolina, 1949.

"Indigo," American Dyestuff Reporter (March 1976), 36-39.

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Sellers, Leila. Charleston Business on the Eve of the Revolution. Chapel Hill: University of North Carolina Press, 1934.

Smith, Henry A.M. "Goose Creek," South Carolina Historical and Genealogical Magazine 29:1 (January 1928), 1-25.

Winberry, John J. "Reputation of Carolina Indigo," South Carolina Historical Magazine 80, 242-250.

The following information is the same for each of the photographs:

Otranto Plantation Indigo Vats
Goose Creek vicinity, Berkeley County, SC
David B. Schneider, Photographer, Preservation Consultants, Inc.
15 March 1988
Location of negative: Preservation Consultants, Inc., Charleston, SC

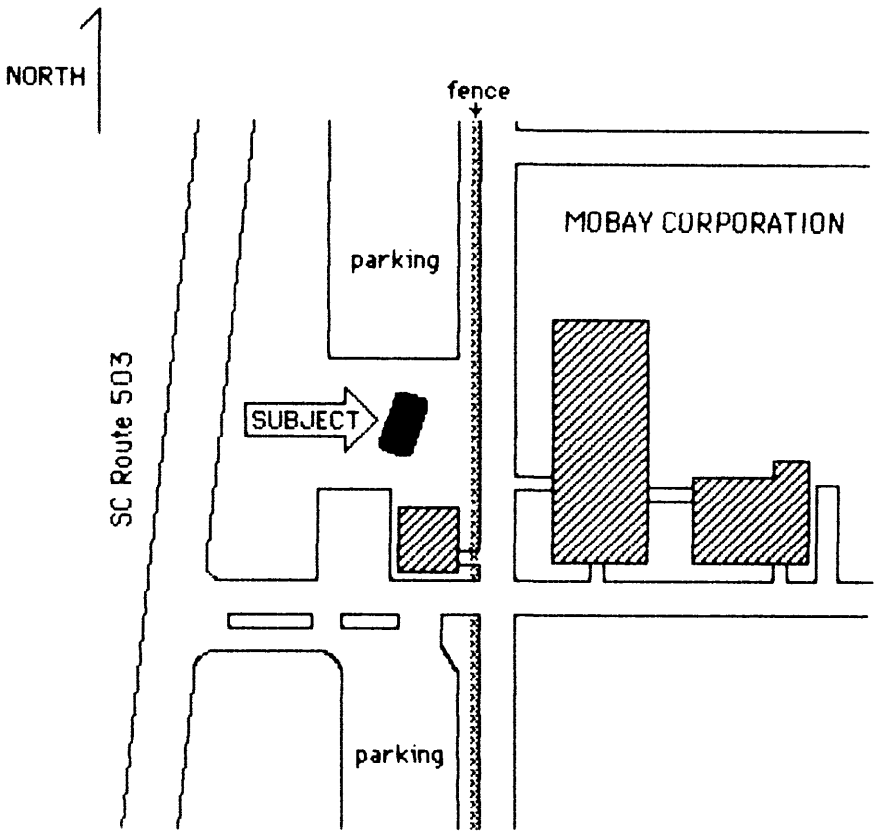
Additional information for each photograph follows:

1. South (Right) and West (Left) Sides, Facing Northeast
2. South (Left) and East (Right) Sides, Facing Northwest
3. Detail of Ramp at North End, Facing East
4. Detail of Upper Vat, Facing North

Otranto Plantation Indigo Dyestuff Vats

Sketch Siteplan

Not to Scale, Refer also to Berkeley County Assessor's Office
Tax Map # 246-00-00



Preservation Consultants, Inc.
Historic Preservation Planning and Design