

3.9 CULTURAL RESOURCES

This section evaluates potential impacts to historic properties and other cultural resources. It starts with an overview of the analytical methodology used in this EIS (section 3.9.1) and then summarizes the common kinds of impacts and mitigation measures that could be associated with construction and operations and maintenance at any of the candidate sites (section 3.9.2). The site-specific affected environment, potential impacts, and mitigation measures are described for each candidate site separately in sections 3.9.3 through 3.9.9. Finally, the impacts of the no-action alternative are reviewed in section 3.9.10. The chapter is supported by appendix K, which includes all of the consultation letters referenced later.

3.9.1 Methodology

DOE's approach for this EIS included an initial identification of known historic properties within proposed facility footprints based on record searches and consultations. DOE also has committed to conduct additional research and other actions needed to assess and resolve adverse effects after the SPR expansion or new development sites are selected.

3.9.1.1 Identification of Historic Properties and Other Cultural Resources

DOE informed the State Historic Preservation Officer (SHPO) in each state with proposed SPR sites of DOE's intent to use this NEPA EIS to document the activities required under section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800. DOE also proposed to the SHPOs that DOE would confine its initial identification effort to known historic properties in proposed facility footprints by using record searches and consultations with American Indian tribes and other interested parties. Under this proposal, DOE and the SHPO of each state would enter into a programmatic agreement to cover additional actions that would be required if a site or sites in the state were selected for development as part of the SPR expansion.

The SHPOs agreed with this conceptual approach, and they expressed willingness to work with DOE to develop acceptable programmatic agreements (Holmes 2005, Oaks 2005, Watson 2005).

As defined in 36 CFR Section 800.16 of the National Historic Preservation Act, "**historic property** means any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meets the National Register criteria."

Under the terms of programmatic agreements with the SHPO in each state, DOE would commit to identify and resolve adverse effects to historic properties in locations selected for expansion or new development. At those locations, DOE would conduct field reconnaissance and additional documentary research and consultations as appropriate to identify cultural resources including historic properties; that is, archaeological or historical sites, structures, districts, or landscapes that are eligible for listing in the National Register of Historic Places. For identified historic properties, DOE would assess project effects and resolve adverse effects in consultation with the SHPOs.

Consistent with this approach, DOE conducted record searches and consulted with interested parties to identify known archaeological sites, historic buildings and structures, state and national historic landmarks, and sites listed on the National Register of Historic Places. DOE conducted a record search at the Mississippi Department of Archives and History for the proposed new facility location at Richton and did a cursory review of mapped sites and districts along associated pipelines and ancillary facilities. For the Bruinsburg facility location, in lieu of a record search, DOE obtained information from National Park

Service personnel and the Civil War Sites Historian at the Mississippi Department of Archives and History (the office of the State Historic Preservation Officer). DOE also conducted a record search in the Texas Archeological Sites Atlas for the Stratton Ridge facility and associated pipelines and facilities. DOE did not conduct a record search for the proposed new facility location in Louisiana (Chacahoula) or proposed expansion facility locations (Bayou Choctaw and West Hackberry). The record searches were not necessary because the Louisiana SHPO, responding to a letter from DOE initiating consultation, stated that no known archaeological sites or historic properties would be affected by the undertaking, based on the information provided by DOE (LeBreux 2005).

3.9.1.2 Contacts with American Indian Tribes

DOE requested that the SHPOs provide lists of American Indian tribes to consult, as well as other parties who might have concerns or information on historic properties in the proposed project areas. In response to the DOE request, Texas did not identify any tribes; Mississippi and Louisiana SHPOs both identified tribes likely to have information or concerns. DOE included these tribes in its consultation effort, in addition to other parties DOE had previously identified in Louisiana, Mississippi, and Texas as potentially concerned. DOE sent letters to initiate consultation with the following federally recognized tribes that might have information or cultural concerns about places in the area of proposed expansion activities:

- Alabama Coushatta Tribes of Texas,
- Chickasaw Nation of Oklahoma,
- Chitimacha Tribe of Louisiana,
- Choctaw Nation of Oklahoma,
- Coushatta Indian Tribe,
- Jena Band of Choctaw Indians,
- Mississippi Band of Choctaw Indians,
- Quapaw Tribe, and
- Tunica-Biloxi Tribe.

The Tribal Historic Preservation Officer for the Choctaw Nation of Oklahoma requested that the tribe be informed after sites are selected for development and expansion. If the tribe determines that any of the selected alternatives are within areas of concern to the tribe, the tribe will request and review all archaeological survey reports and participate in the assessment of project impacts and the identification of measures to resolve adverse effects (Cole 2005). The Director of the Cultural Department of the Chitimacha Tribe said that records and oral tradition do not indicate specific sites of concern in the project vicinity, although the area is part of the aboriginal Chitimacha homeland. She requested immediate contact with the tribe if archaeological remains representing a village site or burial site are encountered during construction (Walden 2005).

DOE also sent letters to the following tribes recognized by the State of Louisiana to request information about sites of cultural concern:

- Biloxi-Chitimacha Confederation of Muskogeans,
- Point au Chien Tribe, and
- United Houma Nation.

3.9.1.3 Assessing Project Effects

As indicated earlier, DOE will not complete the identification of cultural resources, including properties eligible for the National Register of Historic Places (“historic properties”) until after specific sites are

selected for development or expansion. Only then would DOE proceed with field survey and additional information gathering for all facility locations and pipeline routes associated with each site, according to the terms of the relevant programmatic agreements. Consequently, DOE will not complete the assessment of potential effects and the identification of ways to resolve adverse effects until after site selection.

To assess effects on historic properties, DOE would follow the regulations at 36 CFR Part 800. As these regulations require, DOE would work in consultation with the appropriate SHPO and any Indian tribe that attaches cultural significance to identified properties. Together they would determine if the project “may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association” (36 CFR Section 800.5). If an adverse effect were found, DOE would continue consultation to develop modifications to the project or take other measures that could avoid, minimize, or mitigate the adverse effect. For resources that have cultural significance but that are not eligible for the National Register, DOE would use an analogous approach; that is, consultation with those parties that attach cultural significance to the resource to determine if the project may alter the characteristics of the property that contribute to its cultural significance. If so, DOE would identify measures to avoid or minimize the impact.

3.9.2 Common Impacts

This section discusses the possible impacts that could be associated with new construction or operations and maintenance activities. Where available, more detailed information about the nature and scope of project effects on cultural resources is provided in the subsequent sections on each site.

3.9.2.1 Construction Impacts

Following is a list of direct effects on historic properties and other cultural resources that might result from construction at proposed sites or pipelines:

- Damage or destruction of archaeological sites, Native American cultural sites, or historic buildings or structures within the construction zone; and
- A change in the characteristics of a property in or near the construction zone that would diminish qualities that contribute to its historic significance or its cultural importance. This might include visual contrast caused by an access road, noise from construction equipment, rerouting or resurfacing historic roadways, or other construction effects on the location, design, setting, materials, workmanship, feeling, or association of historic properties.

Potential indirect impacts could include vandalism of archaeological sites or historic structures in or near the construction zone because the sites would be more accessible.

3.9.2.2 Operations and Maintenance Impacts

For historic properties and other cultural resources that may be present at a facility site or along a pipeline, direct impacts could include continuing or additional (post construction) damage to archaeological sites or Native American cultural sites. This damage could occur in the facility or along the pipeline or utility corridors by ground-disturbing activities such as road maintenance, vegetation management, or pipeline repair or replacement. Generally such impacts would be less severe than construction affects because they would fall within areas previously disturbed and because the ROWs during operations would be smaller than construction ROWs. The presence of new facilities such as

buildings, well pads, or access roads could change the setting or feeling of a location such as an historic plantation, a Civil War campaign site, an historic district in a town or city, or a Native American cultural site in a way that would interfere with its use or diminish qualities that contribute to its cultural or historic significance. Traffic along new access roads likewise could have visual or noise effects on qualities that contribute to the cultural or historic significance of sites in the vicinity. Bridges, houses, or other structures that are significant solely for architectural reasons are unlikely to be affected by operations and maintenance. Potential indirect operations and maintenance impacts could include vandalism of archaeological sites or historic structures near some facilities because the sites would be more accessible.

3.9.2.3 Mitigation

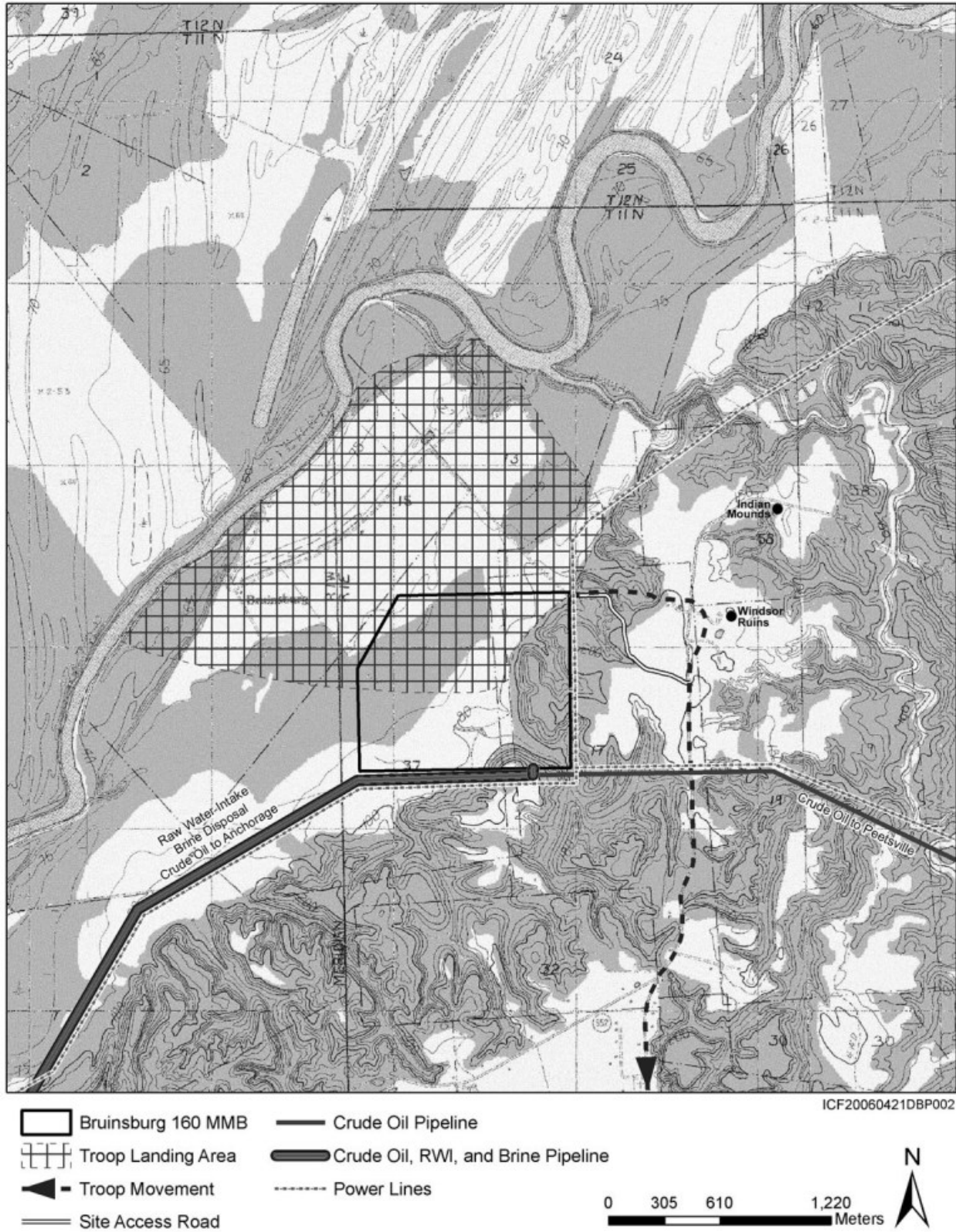
As indicated earlier, DOE will consult with the SHPO and other interested parties to identify measures to resolve adverse effects identified for specific historic properties or other cultural resources, after the SPR expansion sites are selected. Resolution of adverse effects may include measures such as rerouting a pipeline segment or shifting a surface facility footprint to avoid a historic property, thus no longer affecting it. Where avoidance is not possible, measures to mitigate disturbance or destruction of historic properties may include data recovery from an archaeological site or detailed documentation of a building or structure sufficient for the Historic American Buildings Survey or Historic Architectural and Engineering Records. These efforts might be followed with preparation of educational materials written to inform the public about the information gained from archaeological excavations or drawings and photographs of historic structures or other resources. Measures to address visual impacts or other alterations to the setting and feeling of an historic property might include use of vegetation or other methods to screen project facilities from visitors to the historic property. If screening is not possible, the preconstruction setting might be documented with photographs or video, with the resulting materials used to provide public access through interpretive displays or deposition in historical archives.

3.9.3 Bruinsburg Storage Site

3.9.3.1 Affected Environment

The floodplain where the Bruinsburg facility would be developed is the site where the Union Army, under General Grant, disembarked after crossing the Mississippi River on April 30, 1863, to begin the invasion of Mississippi that culminated in the surrender of Vicksburg on July 4, 1863 (Winschel 2005). In 1863, the Mississippi River's course followed what is now Bayou Pierre. The Union Army's landing place was at or very close to the historic town of Bruinsburg, which was a riverfront town at that time. The crosshatched area shown on figure 3.9.3-1 approximates the area that was traversed by troops after landing as they prepared for the subsequent march. The cross-hatched area is likely to contain archaeological remains of troop presence. Remains of at least one of the ships that sank during the invasion are likely to lie northwest of the facility boundary. The historic Bruinsburg Road (shown on figure 3.9.3-1 as a double interrupted line) is reportedly still visible on the floodplain and along the route of the climb up the escarpment. After scaling the escarpment, Grant's troops turned south on what is now State Route 552, passed Windsor (now in ruins), and continued south for about 2.5 miles (4 kilometers) before turning east toward Port Gibson, where a major battle was fought (Winschel 1999). The Civil War Sites Historian of the Mississippi Department of Archives and History, who works on the staff of Mississippi's SHPO, considers the site to be "much more than a campsite or march route." He expects that the Bruinsburg landing location and associated march route would be determined to be National Register eligible as a core/study area, that is, a site closely associated with a major engagement. He also noted that the landing site and the approach route along the bluff are closely associated with the inland campaign portion of the Vicksburg Campaign and the Battle of Port Gibson, which is a designated as a National Historic Landmark (Woodrick 2005).

Figure 3.9.3-1: Cultural Resources in Vicinity of Bruinsburg Facility



On the escarpment where buildings would be constructed and traversed by the power line and crude oil pipeline to Peetsville are prehistoric earthworks (labeled “Indian Mound” on figure 3.9.3-1). These may be significant to the Choctaw; the Windsor Ruins, a fire-damaged plantation house that is a well-known historical symbol of Mississippi; and a segment of the march route of Grant’s troops, as described earlier.

3.9.3.2 Impacts

On the floodplain, clearing for the security zone, fence installation, placement of fill for the storage caverns in the northern part of the facility, and construction of initial segments of the power line extending north from the facility might affect remains associated with the troop landing or prehistoric sites. Prehistoric sites might also be affected by construction of the power lines and pipelines (RWI, brine disposal, and crude oil) extending along the floodplain from the southwest. On the escarpment, clearing for the security zone, fence installation, and other construction within the northeastern portion of the facility site, along the access road, and at the power line and crude oil pipeline crossing of State Route 552 could affect remains associated with the historic line of march of the Vicksburg campaign or prehistoric sites. Prehistoric sites might also be affected by construction elsewhere within the facility site on the escarpment, as well as along the power lines and crude oil pipeline corridor. With regard to indirect effects, construction activities on the floodplain would affect the setting and feeling of the troop-landing site. Construction traffic on State Route 552 and upgrading the access road extending from it to the facility might draw the attention of the visitors to the Windsor Ruins, but the ruins are reasonably screened from the road. Construction activities likely would not affect the mapped Indian mound shown on figure 3.9.3-1 because of distance from it. Other construction impacts of the kind described in section 3.9.2.1 would be expected in connection with cultural resources elsewhere along the pipeline routes and power line routes and around the tank farms at Anchorage and Peetsville.

Following construction, the presence of operations and maintenance of the security zone, fence, berms, and access roads on the floodplain would affect the setting and feeling of the portion of the troop-landing site near the escarpment as seen from some viewpoints. Depending upon the viewer’s location, these facilities might or might not be visible. State Route 552 and the graveled road from it descending to the floodplain have been upgraded since the 1860s; therefore, upgrade of the graveled road to provide access to the facility and the crossings of State Route 552 by the pipeline access road and power line would only add to the lack of integrity of the setting of the march route along the escarpment. Because of the distance separating them from project facilities, the setting and feeling of the Indian mound and Windsor Ruins would likely not be affected by the facility buildings, fence, security buffer zone, power line, pipelines, or access road across the escarpment.

3.9.3.3 Mitigation

Several measures could mitigate the effects of altering the setting at the troop-landing site, which is already changed from the original site because the river channel moved west and the town of Bruinsburg was abandoned. The mitigation measures might include improved access for history students to the area by the access road to the new facility, possibly including construction of a viewpoint on the descent of the escarpment. In addition, DOE might offer some financial support to the National Park Service interpretive program. Currently, access is possible only by special permission from the private landowner; interpretive signs are posted only along public roads, not at the actual site. Mitigation of damage or destruction of archaeological remains associated with the landing and troop movements would be avoidance if possible, or data recovery if not. Based on the initial consultation and review of the Bruinsburg area, staff from the Mississippi SHPO recommended avoiding the area altogether (Woodrick 2005). The current conceptual design with most buildings and other surface structures on the escarpment, however, would minimize the effect on the landing area proper.

Other potential effects of construction on cultural resources that might be identified during an investigation following selection of the Bruinsburg site might be mitigated using other measures described in section 3.9.2.3.

3.9.4 Chacahoula Storage Site

3.9.4.1 Affected Environment

As noted in section 3.9.1, the Louisiana SHPO indicated that no known archaeological sites or historic properties would be affected by SPR development at any of the proposed Louisiana locations for new storage facilities or expansion (LeBreux 2005). For proposed pipeline corridors associated with the Chacahoula facility, SHPO staff indicated that any of the areas near major streams and tributaries are high sensitivity areas for both Native American archaeological sites and historic sites such as plantations. Lands near the Gulf of Mexico and the shallow water that would be traversed by the proposed brine pipeline are high-sensitivity areas for Native American archaeological sites because the land has subsided and sites that were near the shoreline are now under water (Watson 2005). It is unlikely that any historic buildings or structures are present in the construction zone at the Chacahoula facility site because so much of the site is submerged and historically has been submerged, although submerged Native American archaeological sites might be present.

3.9.4.2 Impacts

Based on the response from the Louisiana SHPO, no construction or operations and maintenance impacts have been identified at the potential Chacahoula SPR storage facility location or along pipeline routes. Because the proposed pipeline routes cross many areas that are archaeologically and historically sensitive, impacts like those described in section 3.9.2 would likely be identified following survey if the alternative is selected; except that vandalism of any submerged sites would be unlikely because the presence of new facilities or the brine pipeline would not improve access to submerged sites.

3.9.4.3 Mitigation

Measures described in section 3.9.2.3 could be used to mitigate effects identified in an investigation following the selection of Chacahoula for development, if it is selected.

3.9.5 Richton Storage Site

3.9.5.1 Affected Environment

DOE searched archaeological and historic site records at the Historic Preservation Division of the Mississippi Department of Archives and History in October 2005 for a 2-mile (3.2-kilometer) radius around the center of the proposed Richton facility footprint. The search found no sites listed on the National Register of Historic Places nor any national or state historic landmarks in or near the facility footprint. No archaeological surveys were shown within the footprint, and only one survey—a linear survey for utility lines along a road to the east of the site—falls in the 2-mile (3.2-kilometer) radius. Nevertheless, a number of sites had been recorded in the vicinity based on reports by a local landowner. None has been formally evaluated for National Register eligibility.

There is one recorded archaeological site in the proposed facility footprint. The site record, based on a report from a property owner (who had not visited the site) does not give exact boundaries. The site is a **lithic scatter** with some ceramics in an area that previously was disturbed by logging and replanting activities.

A **lithic scatter** is a distribution of cultural items that consists primarily of lithic (i.e., stone) material. The scatter may include formed tools such as points or knives, or it may contain only chipping debris from tool making activities.

Within a 2-mile (3.2-kilometer) radius from the center of the proposed facility footprint, an additional 15 archaeological sites have been recorded, most discovered by the landowner inspecting the area after logging and replanting activities. Most of those recorded sites are northeast of the proposed facility footprint above Beaver Dam Creek or its tributaries. Most of these sites are reported as lithic scatters with a few ceramic potsherds. In a few cases, possible **midden soil** was noted, in one case up to 2-feet (0.61 meters) deep, at a site that was excavated by a field school from University of Southern Mississippi, according to the site record. In several cases the recorder suggests that a site may be a part of an adjacent site.

Midden soil is soil that has been changed by long-term human occupation, and it typically contains bits of charcoal and other organic materials derived from human use. Midden soil is often darker in color and has a looser texture than surrounding soils. Archaeologists consider midden soil as evidence that a site was used for long-term residence or revisited regularly over many years, rather than reflecting short-term activities.

No historic structures are recorded within the facility footprint or the 2-mile (3.2-kilometer) radius.

The results of the record search for the proposed Richton facility location indicate some archaeological sensitivity of the area as well as substantial ground disturbance from forestry activities. These results suggest that a field survey in the footprint would identify a number of archaeological sites, of which some might be so badly damaged that they would be ineligible for the National Register.

DOE conducted a cursory review of site records for the proposed Richton alternative pipeline routes and marine terminal. Two historic houses listed on the National Register of Historic Places are near the pipeline from the Richton facility to Liberty. These are Tall Pines on Memorial Drive in Hattiesburg and the Lea, Wilford Zachariah House on Mississippi Highway 569 North, 2 miles (3.2 kilometers) north of Liberty. There are many National Register-eligible historic districts in larger communities, such as in Hattiesburg, which is near the proposed storage site; in Pascagoula, the location of the proposed terminal; and along the pipeline routes. In these areas, there also are many individually recorded archaeological sites and historic buildings, bridges, and other structures that have not been evaluated for National Register eligibility. These results indicate that the pipeline routes traverse or pass near historically and archaeologically sensitive areas.

3.9.5.2 Impacts

Based on the record search, no specific construction or operations and maintenance impacts can be identified for the proposed Richton site, pipelines, terminal tank farm, and pump station. Nevertheless, the results of the record search suggest that impacts such as those described in section 3.9.2 likely would be identified following a field survey if one of the Richton alternatives is selected. Impacts to prehistoric archaeological sites would be expected at the facility location, while impacts to historic structures and historic districts as well as prehistoric archaeological sites could be expected along pipeline routes, the marine terminal in Pascagoula, tank farm in Liberty, and pump station along the pipeline to Liberty.

| **3.9.5.3 Mitigation**

Measures described in section 3.9.2.3 could be used to mitigate identified effects.

| **3.9.6 Stratton Ridge Storage Site**

| **3.9.6.1 Affected Environment**

The Texas SHPO indicated that the Stratton Ridge location has not been surveyed for cultural resources except for a pipeline ROW that parallels the road about 328 feet (100 meters) north of Oyster Creek. The Texas SHPO also noted that one **shell midden** site has been recorded on the south side of Oyster Creek immediately across from the project area, suggesting that other sites might be present on the north side of the creek within the project area (Oaks 2005). The SHPO indicated that the entire area should be surveyed.

DOE conducted a record search of the Texas Archeological Sites Atlas for the proposed facility footprint and a 2-mile (3.2-kilometer) radius. The search identified no sites listed on the National Register of Historic Places nor any national or state historic landmarks. About 10 archaeological sites are recorded within a 2-mile (3.2-kilometer) radius of the center of the facility footprint; none has been formally evaluated for eligibility on the National Register. Most are shell middens or **shell scatters**, some with ceramics. Two sites consist of historic Anglo structure foundations of brick with associated glass, iron, and ceramic fragments. The distribution of the sites suggests that the lower lands within the 2-mile (3.2-kilometers) radius are prehistoric. Lands near Oyster Creek and its tributaries or other surface water, such as Chubb Lake, are more sensitive than the uplands. It also could mean this distribution simply may reflect greater development associated with levees, bridges, and roads in the lower lands. According to the site records, some of the sites have been disturbed by development, while others are in excellent condition. Based on these findings, DOE expects that the pipeline routes also would be archaeologically sensitive in similar low-lying areas near bayous, streams, and coastal wetlands.

Shell midden is a subtype of midden-soil that has been altered by human occupation. Shell midden includes large amounts of fragmented shell mixed with charcoal and other organic materials derived from human use. Archaeologists interpret shell midden sites as the result of long-term residence or regular reuse, where the debris from a shellfish-rich diet has become part of the site. **Shell scatters** are distributions of cultural material that consist primarily of shell fragments. Shell scatters do not contain the visibly and texturally different soil of shell middens, and they are interpreted as the result of short-term use or use for only a single activity (such as shellfish harvesting) rather than residence.

| **3.9.6.2 Impacts**

Based on the record search, DOE is unable to identify specific construction or operations and maintenance impacts for the proposed Stratton Ridge site, tank farm, and pipelines. Nevertheless, the results of the record search suggest that impacts such as those described in section 3.9.2 likely would be identified following a field survey if one of the Stratton Ridge alternatives is selected.

| **3.9.6.3 Mitigation**

Measures described in section 3.9.2.3 could be used to mitigate identified effects.

3.9.7 Bayou Choctaw Expansion Site

3.9.7.1 Affected Environment

As noted in section 3.9.1, the Louisiana SHPO indicated that no known archaeological sites or historic properties would be affected by the undertaking at any of the Louisiana locations proposed for new storage facilities or expansion (LeBreux 2005). DOE reviewed sites listed on the Louisiana State Plan in 1976 in its evaluation of impacts prior to construction of the original Bayou Choctaw facility and identified one Indian village site within 1 mile (1.6 kilometers) of the facility location, a historic plantation within 3 miles (4.8 kilometers), and other plantation and Indian village sites in the surrounding area (DOE 1976). The distribution of the listed sites is consistent with the observation of SHPO staff regarding Chacahoula: Areas around major streams and tributaries are sensitive for Native American archaeological sites and historic plantation sites (see section 3.9.4). The review found one site listed on the National Register, a historic Mississippi River lock more than 4 miles (6.4 kilometers) from the facility location. In the description of preconstruction site conditions, the closest residences identified were 1.6 miles (3.2-kilometers) from the facility, and the review made no mention of existing structures on the facility site, which suggests the absence of any historic plantation remains. The review did note the land use during the past 100 years has been agriculture (DOE 1976).

Because the facility is situated in a geographic setting that is considered archaeologically sensitive, it is expected that Native American archaeological sites might be identified during a survey of areas where ground would be disturbed during expansion. As indicated earlier, there is no suggestion that plantation structures would be found.

3.9.7.2 Impacts

Based on the response from the Louisiana SHPO, no construction or operations and maintenance impacts have been identified at the Bayou Choctaw facility location. Impacts to prehistoric archaeological sites as described in section 3.9.2 might be identified following a field survey if one of the alternatives that includes Bayou Choctaw as an expansion site is selected. Impacts to historic structures are unlikely.

3.9.7.3 Mitigation

Measures described in section 3.9.2.3 could be used to mitigate identified effects.

3.9.8 Big Hill Expansion Site

3.9.8.1 Affected Environment

The Texas SHPO indicated that the Big Hill facility and expansion area have never been surveyed for cultural resources and that no archaeological sites have been recorded in the vicinity (Oaks 2005). Because the Big Hill landform is unique, the SHPO believes that it may have attracted Native American populations, and that any previously undisturbed areas should be surveyed for archaeological sites. The SHPO also noted that because the SPR facility was not constructed until 1987, none of the buildings associated with it would be old enough to be considered historic properties.

A record search performed by the Texas Archaeological Research Laboratory for the 1992 draft EIS identified no recorded archaeological or historical sites located within the Big Hill salt dome project area that would be affected by the construction of expanded storage capacity at Big Hill (DOE 1992a). The Archaeology Division of the Texas Historical Commission has no record of field reconnaissance within the footprint or the expansion acreage to the north before or since the existing facility was constructed;

thus, the negative findings of the record search are not surprising. Archeology Division staff believes that the presence of archaeological sites on the hill above the floodplain within the Big Hill expansion footprint is likely (Martin 2005).

3.9.8.2 Impacts

Based on the response from the Texas SHPO and an earlier record search, no construction or operations and maintenance impacts can be identified at the Big Hill expansion facility location. Impacts to prehistoric archaeological sites as described in section 3.9.2 might be identified following field survey of the previously undisturbed areas within the facility and along the pipeline ROW as well as of the expansion area to be added to the facility. Impacts to historic structures are unlikely.

3.9.8.3 Mitigation

Measures described in section 3.9.2.3 could be used to mitigate identified effects.

3.9.9 West Hackberry Expansion Site

3.9.9.1 Affected Environment

As noted in section 3.9.1, the Louisiana SHPO indicated that no known archaeological sites or historic properties would be affected by the undertaking at any of the Louisiana locations proposed for new storage facilities or expansion (LeBreux 2005). For the 1976 EIS for West Hackberry, DOE reviewed National Register listings and requested that the Louisiana SHPO review state registers. No National Register sites were listed for Cameron or Calcasieu Parish and none of three historic markers in Calcasieu Parish was located in the facility area (DOE 1976). It is possible that unrecorded historic structures or prehistoric archaeological sites exist in the security area to be cleared or along the new site access road to be constructed. Around new access roads and well-pad sites within the existing facility, historic structures are unlikely, but prehistoric archaeological sites might be present.

3.9.9.2 Impacts

Based on the response from the Louisiana SHPO, no construction or operations and maintenance impacts have been identified at the West Hackberry facility location. Impacts to prehistoric archaeological sites as described in section 3.9.2 might be identified following field survey. Impacts to historic structures are unlikely, except in the perimeter zone.

3.9.9.3 Mitigation

Measures described in section 3.9.2.3 could be used to mitigate identified effects.

3.9.10 No Action Alternative

The No-Action alternative would limit the impacts from SPR construction and operations to those that have already occurred or that will occur at the existing SPR storage sites at Bayou Choctaw, Big Hill, Bryan Mound, and West Hackberry. The existing environments for the proposed new SPR storage site alternatives would be maintained. The Bruinsburg storage site would likely remain in agricultural use because of the lack of development pressure. The Chacahoula storage site could remain undeveloped. However, existing oil and gas activities occur near the Chacahoula storage site and the proposed site could be developed by a commercial entity for oil and gas purposes. The Richton site would likely remain in use as a pine plantation because of the lack of development pressure. Dow, British Petroleum,

Conoco, and Occidental energy companies have storage facilities on the Stratton Ridge dome and it is possible that the Stratton Ridge storage site could be developed for cavern storage by a commercial entity. For the sites of terminals that are in developed petroleum storage areas, it is possible that a commercial entity could develop them for further storage. If DOE selected the No-Action alternative, there would be no additional potential impact of disturbing cultural resources that include archaeological sites, historic sites, or historic visual settings.