3.13 Hazardous Materials and Solid Waste

Issues related to hazardous materials are the potential impacts to the environment from an accidental release of hazardous materials during transportation to and from the project site or from use, storage, or a potential release at the site. In addition to hazardous materials, this section summarizes the solid wastes that would be generated during mining operations.

The study area for hazardous materials and solid waste comprises the proposed permit area and local public highways used to access I-20 from the proposed mine, including U.S. Highway 59, SHs 43 and 149, and FM 2906, 2675, 959, 968, and 1794. The cumulative effects study area for hazardous materials and solid waste comprises the Rusk Permit Area and past, present, and reasonably foreseeable future actions (see Section 2.7), and local public highways used to access I-20 from the proposed mine, including U.S. Highway 59, SHs 43 and 149, and FM 2906, 2675, 959, 968, and 1794.

3.13.1 Affected Environment

The affected environment for hazardous materials and solid wastes includes air, water, soil, and biological resources within the study and cumulative effects study areas that potentially could be affected by an accidental release of hazardous materials or solid wastes during transportation to and from the proposed mine and during storage, use, and disposal at the proposed project.

Hazardous materials, which are defined in various ways under a number of regulatory programs, can represent potential risks to both human health and to the environment when not managed properly. The term hazardous materials includes the following materials that may be utilized or disposed of in conjunction with the proposed lignite mining operations:

- Substances covered under the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and Mine Health and Safety Hazard Communication Standards (29 CFR 1910.1200 and 30 CFR 42) – the types of materials that may be used in mining activities and that would be subject to these regulations would include almost all of the materials covered by the regulations identified below.
- Hazardous materials as defined under the U.S. Department of Transportation (USDOT) regulations in 29 CFR, Parts 170-177 – the types of materials that may be used in mining activities and that would be subject to these regulations would include fuels, some paints and coatings, and other chemical products.
- Hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act and listed in 40 CFR Table 302.4 – the types of materials that may contain hazardous substances that are used in mining activities and that would be subject to these requirements include solvents, solvent-containing materials (e.g., paints, coatings, degreasers), acids, and other chemical products.
- Hazardous wastes as defined in the Resource Conservation and Recovery Act (RCRA) – procedures in 40 CFR 262 are used to determine whether a waste is hazardous – the types of materials used in mining activities and that would be subject to these requirements could include liquid waste materials with a flash point less than 140°F, spent solvent-containing wastes, and corrosive liquids.

- Any hazardous substances and extremely hazardous substances as well as petroleum products such as gasoline, diesel, or propane, that are subject to reporting requirements (Threshold Planning Quantities) under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act (SARA) the types of materials that may be used in mining activities and that would be subject to these requirements include fuels, coolants, acids, and solvent-containing products such as paints and coatings.
- Petroleum products defined as "oil" in the Oil Pollution Act of 1990 – the types of materials used in mining activities and that would be subject to these requirements include fuels, lubricants, hydraulic oil, and transmission fluids.

In conjunction with the definitions noted above, the following lists provide information regarding management requirements during transportation, storage, and use of particular hazardous chemicals, substances, or materials:

- SARA Title III List of Lists or the Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act and Section 112(r) of the CAA.
- USDOT listing of hazardous materials in 49 CFR 172.101.

Solid waste consists of a broad range of materials that include garbage, refuse, wastewater treatment plant sludge, non-hazardous industrial waste, and other materials (i.e., solid, liquid, or contained gaseous substances) resulting from industrial, commercial, mining, agricultural, and community activities (USEPA 2006). Solid wastes are regulated under different subtitles of RCRA and include hazardous waste and non-hazardous waste. Non-hazardous wastes are regulated under RCRA Subtitle D.

In addition to the definitions of hazardous materials described above, the State of Texas defines certain materials as Nonhazardous Industrial Wastes that, while not classified as hazardous, may pose a potential threat to human health and the environment if not managed properly. These materials are classified as Class I Nonhazardous Industrial Waste under 30 TAC, Chapter 335, Subchapter R Sections 335.501 to 335.508 (TCEQ 2005). An example of a Class I Nonhazardous Industrial Waste would be water that is contaminated with ethylene glycol (antifreeze).

Certain types of materials, while they may contain potentially hazardous constituents, are specifically exempt from regulation as hazardous wastes. Used oil, for example, may contain toxic metals, but would not be considered a hazardous waste unless it meets certain criteria (Characteristics of Hazardous Waste 40 CFR 261). Used oil recycling is regulated under 30 TAC Chapter 324 (TCEQ 2009e).

A database review was conducted to determine if there are any contaminated sites in the Rusk Permit Area that would be cause for concern to coal mining (HDR 2009g). The database review did not identify sites of potential concern.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

<u>Hazardous Materials</u>

Potentially hazardous materials or substances that would be transported to and used at the proposed project primarily would continue to be stored at the existing facilities for the South Hallsville No. 1 Mine, with the following exceptions. Diesel fuel and gasoline would be transported to the proposed equipment fueling station in the Rusk Permit Area where they would be stored in 75,000-gallon and 6,000-gallon aboveground tanks, respectively. Secondary containment would be provided by a concrete spill containment structure. Although there is no proposed increase in the annual use or consumption of any hazardous material, the proposed project would extend the period over which these materials would be transported to, and used and stored at, the site by approximately 15 years. The primary materials that would be used or consumed and their annual usages are identified in **Table 3.13-1**.

Operations at the proposed Rusk Permit Area would involve the transport, handling, storage, use, and disposal of hazardous materials including, but not limited, to diesel fuel, gasoline, lubrication oils, and anti-freeze. Fuels and lubricants are the hazardous materials that would be transported and used in the largest quantities. The estimated annual use of these materials is listed in **Table 3.13-1**. Numerous other hazardous materials may be utilized in mining and maintenance operations; they would be stored and used in relatively small quantities (e.g., materials in aerosol cans or 5-gallon containers). A release of a reportable quantity of a hazardous substance to the environment must be reported within 24 hours to the National Response Center (40 CFR Part 302). Sections 327.1 to 327.5 of the TAC contain spill response and reporting rules. Also, the Texas Water Code Sections 26.039 and 26.262 contain provisions for reporting and abatement of a spill of a reportable quantity of a hazardous substance to the waters of the State. If a reportable spill should occur, it would be mitigated, and contaminated materials would be disposed of in accordance with these federal and state regulations.

Table 3.13-1 Primary Hazardous Materials or Substances[1]

Material	Annual Use	Unit
Diesel	4,000,000	Gallons
Gasoline	70,800	Gallons
Lubrication oil	137,500	Gallons
Vehicle antifreeze	23,200	Gallons

[1] Reflects current use rates for the South Hallsville No. 1 Mine. Annual rates are not proposed to increase under the Proposed Action.

Source: Sabine (2010a).

Transportation of Hazardous Materials

Hazardous materials would be transported by commercial carriers in accordance with requirements of Title 49 of the CFR. Carriers would be licensed and inspected as required by the TXDOT. Tanker trucks would be inspected and would have to be properly certified by the State of Texas. These permits, licenses, and certificates would be the responsibility of the carrier. Title 49 of the CFR requires that all shipments of hazardous substances be properly identified and placarded. Shipping papers must be accessible and include Material Safety Data Sheets (MSDS) describing the substance, immediate health hazards, fire and explosion risks, immediate precautions, fire-fighting information, procedures for handling leaks or spills, first aid measures, and emergency response telephone numbers.

In the event of a release en-route to the proposed Rusk Permit Area, prior to entry into the existing South Hallsville No. 1 Mine property, the transportation company would be responsible for response and cleanup. Trucks would be used to transport hazardous materials to the mine, and shipments most likely would originate from cities such as Dallas, Tyler, or Longview, Texas, or Shreveport, Louisiana, and would be transported via I-20 or federal highways to FM 968 to the main gate of the existing South Hallsville No. 1 Mine and then on existing mine roads to the proposed utility/transportation corridor. Shipments would then cross the Sabine River for delivery to the proposed equipment fueling area in the Rusk Permit Area (**Figure 2-2**).

Based on annual use, the material of greatest risk for a spill during transport would be diesel fuel. Sabine anticipates a delivery frequency of 400 tanker shipments at 10,000 gallons per shipment each year over the life of the mine (estimated to be 30 years of active mining). This would result in a total of approximately 12,000 shipments of diesel fuel (400 shipments X 30 years). Due to the large number of deliveries, the risk of a spill during transport was evaluated for diesel fuel.

For this analysis, it was assumed that diesel fuel shipments would be coming from refineries or wholesalers located between Shreveport, Louisiana, and Tyler, Texas, or possibly farther distant. Therefore, for analysis purposes, it is assumed that shipments would average 50 miles (the approximate distance from the proposed permit boundary to either Tyler or Shreveport). From **Table 3.13-2** it can be seen that the potential for incidents to occur is approximately 0.31 incident over the life of the project. Since not all incidents would involve a release, the number of incidents with a release would be less than the number of expected incidents shown on **Table 3.13-2**.

The environmental effects of a transportation–related release would depend on the substance, quantity, timing, and location of the release. Some of the materials could have immediate adverse effects on water quality and aquatic resources if a spill were to enter surface water. However, the probability of a spill directly into a waterway during transport to the mine site is very low. Therefore, it is unlikely that spills of these materials would affect waterways. With rapid cleanup actions, a spill would not be anticipated to result in long-term impacts to soils, surface water, or groundwater.

Table 3.13-2 Potential of Hazardous Material Transportation Incidents

Material	Annual Use (gallons)	Shipment Quantity (gallons)	Number of Shipments[1]	Distance (miles)	Incident Rate per Million Miles[2]	Calculated Number of Incidents[3]
Diesel Fuel	4,000,000	10,000	12,000	600,000	0.0000007	0.31

[1] 30-year life of mine (400 shipments X 30 years).

[2] Table 25, page 4-13 and Table 33, p. 5-4, Battelle (2001), includes accidents and en-route leaks, but not loading/unloading incidents.

[3] Number of incidents = distance X (incident rate).

A large-scale release of diesel fuel or several of the other substances delivered to the site could have implications for public health and safety. The location of a release again would be the primary factor in determining the effects of a release. However, the probability of a release anywhere along the anticipated transportation routes to the mine site is expected to be low; the probability of a release within a populated area would be even lower; and the probability of a release involving an injury or fatality would be still lower. Therefore, it is not anticipated that a release involving a severe effect to human health or safety would occur during the life of the project.

The Sabine River currently is crossed by numerous highways in Texas and Louisiana, including I-20. The 400 diesel fuel deliveries annually to the proposed Rusk Permit Area cross the Sabine River; however, the number of deliveries would be very small compared to the volume of fuel that would be transported over the river on public roads throughout the region. Speed limits on mine traffic would provide a further safety factor lessening the risk of accidents resulting in a release to the Sabine River. Given the foregoing and the low overall probability of an accident resulting in release as discussed above, there is low potential for a fuel spill to impact the Sabine River.

Storage and Use of Hazardous Materials

Over the 30-year operational life of the project, the probability of minor spills of materials such as fuel and lubricants would be relatively high. These releases could occur during fueling operations or from equipment failure (e.g., hydraulic hose failure). A minor oil spill on the mine site where cleanup equipment would be readily available would be localized, contained, and disposed of in accordance with the applicable laws and regulations. Accidents involving other hazardous materials also could occur during mine operation. Sabine would develop and maintain a site-specific SPCC Plan to deal with unplanned

releases of petroleum products and has prepared an Emergency Response Plan that establishes procedures for responding to accidental spills or releases of other hazardous materials to minimize health risks and environmental effects. The plan would include procedures for evacuating personnel, maintaining safety, cleanup and neutralization activities, emergency contacts, internal and external notifications to regulatory authorities, and incident documentation. Proper implementation of the Emergency Response Plan would be expected to minimize the potential for significant impacts associated with potential releases of hazardous materials. Using proper handling and storage procedures, impacts resulting from potential spills of hazardous materials should be minimal. MSDSs for the hazardous materials stored and used at the mine would be maintained on site.

Uncontrolled Hazardous Materials Sites

An environmental database search (in compliance with the ASTM E1527-05 standard) and review was conducted for the proposed Rusk Permit Area and a 0.5-mile buffer area around the project boundary (HDR 2009g). Based on the results of the environmental database search and review, no known hazardous materials release sites presenting contamination concerns were identified within the Rusk Permit Area. However, due to the historic oil and gas production, there is a potential for the presence of historic leaks and spills. If historic leaks or spills exist in the proposed disturbance area, there is the potential for worker exposure to hazardous substances and/or environmental impacts if contaminated materials have to be removed prior to facilities construction or overburden removal. Mitigation is being considered to minimize the potential for worker exposure and environmental impacts in the event of the unanticipated discovery of a contaminated site (see mitigation measure HM-1 in Section 3.13.4, Monitoring and Mitigation Measures). In addition, in an area of many years of oil and gas production, there is the potential that unplugged abandoned wells may exist. Mining into unidentified abandoned wells may pose a risk of degradation of groundwater and hydrocarbon resources. As discussed in Section 2.5, Proposed Action, oil and gas wells within the area of proposed mining would be sealed in accordance with RCT regulations in advance of mining. Oil and gas wells that would be mined through would be plugged in accordance with 16 TAC 3.14. It is assumed that Sabine would implement these measures for both identified wells and previously unidentified wells that may be encountered in the proposed disturbance area, thereby minimizing the potential for related groundwater contamination.

Solid Waste

During mining, hazardous waste, industrial waste, and used oil may be generated. These materials would be managed as described in Section 2.5.1.7 in accordance with regulatory programs identified in Section 3.13.1, Affected Environment. Hazardous wastes would be transported by approved transporters to licensed hazardous waste disposal facilities. All hazardous wastes would be accumulated, labeled, and manifested in compliance with applicable federal and state regulations.

The types of solid waste that would be generated are generally described in Section 2.4.1.7. Non-hazardous solid wastes generated at the facility would be disposed of in accordance with state and federal regulations. With proper handling and disposal, solid waste would have minimal impact.

3.13.2.2 No Action Alternative

Under the No Action Alternative, the proposed Rusk Permit Area would not be developed and the related potential effects associated with the transportation, storage, or use of hazardous materials or the disposal of solid wastes would not be extended an additional 15 years beyond current operations. Currently authorized operations at the South Marshall Permit Area of the South Hallsville No. 1 Mine and the existing potential for effects associated with the transportation, storage, or use of hazardous materials or the disposal of solid wastes would continue through the end of active mining (in approximately 2027), at which point it would decline and subsequently cease following final closure and reclamation (in approximately 2035).

3.13.3 Cumulative Impacts

The past and present actions and RFFAs are identified in Section 2.7 and are shown in **Figure 2-12**. The Proposed Action would not result in an incremental increase in the annual amount of hazardous materials shipped along the identified transportation routes; however, it would result in an incremental increase in the duration of hazardous materials transport along the identified routes by approximately 15 years. On I-20 and the major federal highways, the continued transportation of hazardous materials to the Rusk Permit Area would represent a small incremental increase over existing conditions due to the existing high truck transport volume. On FM 968, this increase would represent a larger incremental increase in the risk of a spill during transport since the roads are in a generally rural setting. Although it is not anticipated that the identified past and present actions and RFFAs would use FM 968 for transport of materials, oil and gas activities in the region would be anticipated to have a cumulative interaction with the Proposed Action-related hazardous materials transport on FM 968. Based on the projected low probability of an accident resulting in a release under the Proposed Action, the impact of the incremental increase is anticipated to be small. With proper implementation of spill prevention and/or emergency response plans, cumulative impacts associated with the transport, storage, and use of hazardous substances are not anticipated.

The proposed project would contribute to a small cumulative increase of the amount of solid waste that would be generated in the area; however, impacts would be expected to be minimal.

3.13.4 Monitoring and Mitigation Measures

The transportation, storage, and handling of hazardous materials and the disposal of solid wastes would be conducted in compliance with applicable rules and regulations. Due to the historic oil and gas production in the Rusk Permit Area, there is a potential for the presence of historic leaks and spills. Therefore, the following mitigation is being considered to minimize the potential for worker exposure and environmental impacts in the event an unanticipated contaminated site is discovered,

HM-1: To minimize the potential for worker exposure or environmental impacts in the event of an unanticipated discovery of a contaminated site during project construction or operation, Sabine would develop a protocol for the handling of contaminated sites to ensure protection of workers and to minimize potential environmental impacts.

Effectiveness: This measure would be effective in reducing potential worker exposure and environmental impacts in the event a contaminated site is discovered during project construction or operations.

3.13.5 Residual Adverse Effects

Residual adverse effects as a result of a hazardous material spill would include the potential effects to a populated area or a sensitive environmental resource along a transportation route. Residual adverse effects from the use of hazardous materials on the project site would depend on the substance, quantity, timing, location, and response involved in an accidental spill or release. Prompt cleanup of spills and releases would minimize the potential for any residual adverse effects of such events. Due to the low probability of impacts of spills on water resources or within populated areas, the potential for residual adverse impacts are anticipated to be minimal.