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Final Environmental Impact Statement

Southeast Expansion Project

Gulf South Pipeline Company, LP

Docket Nos. CP07-032-000
PF06-031-000
FERC EIS 0210F

Federal Energy Regulatory Commission
Office of Energy Projects
Washington, DC 20426

August 2007

Cooperating Agencies:

U.S. Army Corps of Engineers

U.S. Fish & Wildlife Service

U.S. Environmental Protection Agency

In Reply Refer To:
OEP/DG2E/Gas Branch 2
Gulf South Pipeline Company, LP
Docket No. CP07-032-000, et al.

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this Final Environmental Impact Statement (EIS) for the natural gas pipeline facilities proposed by Gulf South Pipeline Company, LP (Gulf South) under the above-referenced docket. Gulf South's Southeast Expansion Project (Project) would be located in various counties and parishes in eastern Louisiana, Mississippi, and western Alabama.

The Final EIS was prepared to satisfy the requirements of the National Environmental Policy Act. The FERC staff concludes that the proposed Project, with the appropriate mitigation measures as recommended, would have limited adverse environmental impact.

The U.S. Fish and Wildlife Service (FWS), U.S. Environmental Protection Agency (EPA), and the U.S. Army Corps of Engineers (COE) are federal cooperating agencies for the development of this EIS. A federal cooperating agency has jurisdiction by law or special expertise with respect to any environmental impact involved with the proposal and is involved in the NEPA analysis.

Gulf South indicates that the general purpose of the proposed Project is to provide producers in eastern Texas and northern Louisiana an eastern market outlet for production from CenterPoint Energy Gas Transmission Company in the Perryville, Louisiana, area.

The Final EIS addresses the potential environmental impacts resulting from the construction and operation of the following facilities:

- Approximately 111 miles of 42-inch-diameter natural gas transmission pipeline extending easterly from Simpson County, Mississippi, to Choctaw County, Alabama;
- three new compressor stations, the Delhi, Harrisville, and Destin Compressor Stations, located in Richland County, Louisiana; Simpson County, Mississippi; and Choctaw County, Alabama, respectively; and
- other ancillary facilities including five meter and regulator (M/R) facilities, eight mainline valves, one side valve, and two pig launcher and/or receiver facilities.

Dependent upon Commission approval, Gulf South proposes to complete construction and begin operating the proposed Project in January 2008.

The Final EIS has been placed in the public files of the FERC and is available for public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street N.E., Room 2A
Washington, DC 20426
(202) 502-8371

A limited number of copies of the Final EIS are available from the Public Reference Room identified above. In addition, CD copies of the Final EIS have been mailed to affected landowners; various federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; local libraries and newspapers; intervenors; and other individuals that expressed an interest in the proposed Project. Hard-copies of the Final EIS have also been mailed to those who requested that format during the scoping and comment periods for the proposed Project.

In accordance with the Council on Environmental Quality's (CEQ) regulations implementing NEPA, no agency decision on a proposed action may be made until 30 days after the U.S. Environmental Protection Agency (EPA) publishes a notice of availability of a Final EIS. However, the CEQ regulations provide an exception to this rule when an agency decision is subject to a formal internal process that allows other agencies or the public to make their views known. In such cases, the agency decision may be made at the same time the notice of the Final EIS is published, allowing both periods to run concurrently. Should the FERC issue Gulf South authorizations for the proposed Project, it would be subject to a 30-day rehearing period. Therefore, the Commission could issue its decision concurrently with the EPA's notice of availability.

Additional information about the proposed Project is available from the Commission's Office of External Affairs, at **1-866-208-FERC** or on the FERC Internet website (www.ferc.gov). To access information via the FERC website, click on the "eLibrary" link, then click on "General Search" and enter the docket number (CP07-032), excluding the last three digits, in the Docket Number field. Be sure you have selected an appropriate date range. The "eLibrary" link provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings. For assistance with "eLibrary," please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll-free at 1-866-208-3676, or for TTY, contact (202) 502-8659.

In addition, the Commission now offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to these documents. To learn more about eSubscription and to sign-up for this service, please go to www.ferc.gov/esubscribenow.htm.

Kimberly D. Bose,
Secretary

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ADCR	Alabama Department of Conservation and Recreation
ADCNR	Alabama Department of Conservation and Natural Resources
ADEM	Alabama Department of Environmental Management
AICPA	American Institute of Certified Public Accountants
AQCR	Air Quality Control Regions
ASOGB	Alabama State Oil and Gas Board
ATWS	additional temporary work space
BA	Biological Assessment
BACT	best available control technology
Bcf/d	billion cubic feet per day
BGEPA	Bald and Golden Eagle Protection Act
BO	Biological Opinion
BOD	Biological oxygen demand
BTU	British thermal units
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEGT	CenterPoint Energy Transmission
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CGT	Columbia Gulf Transmission Corp.
cm	centimeter(s)
CO	carbon monoxide
CO_2	carbon dioxide
COE	U.S. Army Corps of Engineers
Columbia	Columbia Gas Transmission
Commission	Federal Energy Regulatory Commission
Crosstex	Crosstex Mississippi Pipeline, LP
CRP	Conservation Reserve Program
CTP Project	Carthage to Perryville Project
CWA	Clean Water Act
dBA	A-weighted decibels
dbh	diameter at breast height
Denbury	Denbury Resources
Destin	Destin Pipeline Company, LLC
DO	dissolved oxygen
DOT	U.S. Department of Transportation
EFH	essential fish habitat
EI	environmental inspector
EIA	Energy Information Administration
EIS	environmental impact statement

EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESD	emergency shut down
ETM	East Texas to Mississippi Expansion
F	Fahrenheit
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission
FSA	Farm Service Agency
FWS	U.S. Fish and Wildlife Service
GSA	Geologic Survey of Alabama
Gulf South	Gulf South Pipeline Company, L.P.
HAP	hazardous air pollutant
HCA	high consequence areas
HDD	horizontal directional drill
HDD Plan	Horizontal Directional Drill Plan
Hp	horsepower
kPa	kilopascals
LAC	Louisiana Administrative Code
LDEQ	Louisiana Department of Environmental Quality
L_{dn}	day-night sound level
LDNR	Louisiana Department of Natural Resources
LDTD	Louisiana Department of Transportation and Development
LDWF	Louisiana Department of Wildlife and Fisheries
LGS	Louisiana Geological Survey
LNG	liquefied natural gas
m^3	cubic meters
MACT	Maximum Achievable Control Technology
MBTA	Migratory Bird Treaty Act
MAOP	maximum allowable operating pressure
MCEQ	Mississippi Commission on Environmental Quality
MDEQ	Mississippi Department of Environmental Quality
MDWFP	Mississippi Natural Heritage Program
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
mgd	million gallons per day
MLRA	Major Land Resource Area
MLV	mainline block valves
MMNS	Mississippi Museum of Natural Science
MMRI	Mississippi Mineral Resources Institute
MNHP	Mississippi Natural Heritage Program
MP	milepost
M/R	meter and regulation
msl	mean sea level
NAPPO	North American Plant Protection Organization
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act

NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NGPSA	Natural Gas Pipeline Safety Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMHC	non-methane hydrocarbons
NNSR	Nonattainment New Source Review
NOI	Notice of Intent
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NSA	nearest noise sensitive area
NSPS	new source performance standards
NSR	New Source Review
O_3	ozone
OD	outside diameter
OEP	Office of Energy Projects
OPS	Office of Pipeline Safety
PEM	palustrine emergent
Petal Gas	Petal Gas Storage, LLC
PFO	palustrine forested
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
PM	particulate matter
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
PSD	prevention of significant deterioration
psig	pounds per square inch gauge
PSS	palustrine scrub-shrub
RCW	red-cockaded woodpecker
Secretary	Secretary of the Commission
SESH	Southeast Supply Header
SHPO	State Historic Preservation Office
SI	spark ignition
SO_2	sulfur oxides, measured as sulfur dioxide
SONRIS	Strategic Natural Resources Information System
Southern Natural	Southern Natural Gas Company
SPCC	Spill Prevention, Containment, and Control
SEGT	Spectra Energy Gas Transmission
SSURGO	Soil Survey Geographic
SWPPP	Stormwater Pollution Prevention Plan
Tcf	trillion cubic feet

Tennessee Gas	Tennessee Gas Pipeline Company
tpy	tons per year
Transco	Transcontinental Pipe Line Company
USC	United States Code
USDA	U.S. Department of Agriculture
USDI	United States Department of the Interior
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compounds
WRP	Wetland Reserve Program

EXECUTIVE SUMMARY

INTRODUCTION

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this Final environmental impact statement (EIS) to fulfill requirements of the National Environmental Policy Act (NEPA). The purpose of this document is to make public our analysis of the environmental impacts that would likely result from the construction and operation of the proposed Southeast Expansion Project (Project).

This EIS has been prepared in cooperation with the U.S. Fish and Wildlife Service (FWS), the U.S. Army Corps of Engineers (COE), and the U.S. Environmental Protection Agency (EPA).

PROJECT BACKGROUND

On June 28, 2006, we[1] approved the Gulf South Pipeline Company, LP's (Gulf South) request to use the Commission's Pre-filing Review Process for the proposed Southeast Expansion Project. The purpose of our pre-filing review is to work in partnership with the project sponsor, other federal and state agencies, as well as concerned citizens and non-governmental organizations, to identify and address project-related issues prior to the filing of an application with the Commission for a Certificate of Public Convenience and Necessity (Certificate).

On December 11, 2006, Gulf South filed an application with the Commission pursuant to Section 7(c) of the Natural Gas Act and Part 157 of the Commission's regulation for a Certificate of Public Convenience and Necessity (Certificate) to construct, operate, and maintain an interstate natural gas pipeline and associated ancillary and aboveground facilities, collectively known as the Project. We have prepared our analysis based on this application and subsequent filings by Gulf South.

On April 13, 2007, we issued the Draft EIS for the proposed Project.

PROPOSED ACTION

In order to transport natural gas from producers in eastern Texas and northern Louisiana, Gulf South proposes to construct and operate approximately 110.8 miles of natural gas pipeline and associated ancillary facilities capable of transporting up to approximately 1.272 billion cubic feet per day of natural gas. Specifically, Gulf South proposes to construct and operate:

- Approximately 110.8 miles of 42-inch-diameter natural gas pipeline in Simpson, Smith, Jasper, and Clarke Counties, Mississippi; and Choctaw County, Alabama;
- Three new compressor stations: the Delhi Compressor Station located in Richland Parish, Louisiana, and the Harrisville and Destin Compressor Stations located in Simpson and Clarke Counties, Mississippi, respectively;
- Other ancillary facilities, including five meter and regulation (M/R) facilities, eight mainline valves, one side valve, and two pig launcher and/or receiver facilities.

[1] "We," "us," and "our" refer to the environmental staff of the Federal Energy Regulatory Commission's Office of Energy Projects.

Dependent upon Commission approval, Gulf South proposes to complete construction and begin operating the proposed Project in January 2008.

PUBLIC OUTREACH AND COMMENTS

As part of our pre-filing review, we issued a *Notice of Intent to Prepare an Environmental Impact Statement, Request for Comments on Environmental Issues*, and *Notice of Public Scoping Meetings* for the Southeast Expansion Project on September 5, 2006. This notice was published in the Federal Register (FR) and sent to: affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; local libraries; newspapers; and other interested parties. In response to our notices, and at several public meetings held along the proposed pipeline route, we received numerous comments from landowners, concerned citizens, public officials, and government agencies regarding the proposed Project. These comments expressed concerns with the location of the proposed pipeline and the effects of the proposed Project on numerous resources and land uses, including soils, waterbodies, wetlands, wildlife, vegetation, threatened and endangered species, safety and reliability, timber production, and state- and federally-managed lands.

We prepared a Draft EIS and issued a Notice of Availability (NOA) that was published in the Federal Register (FR) on April 20, 2007, establishing a 45-day comment period ending on May 29, 2007. During this period, we conducted public comment meetings in Mendenhall and Heidelberg, Mississippi, and Butler, Alabama, on May 8, 9, and 10, 2007, respectively. During this period and at the public comment meetings, we received comments regarding the location of the proposed pipeline and effects on land use, safety, and reliability. We received written comments on the Draft EIS from two federal agencies, the DOI and EPA, and four potentially affected property owners. Comments received during this period were considered and addressed in this Final EIS. Submitted comments and our responses to those comments are provided in Appendix L of this document.

This Final EIS has been mailed to the agencies, individuals, and organizations on the mailing list found in Appendix A and has been filed with the EPA for formal notice of availability.

ENVIRONMENTAL IMPACTS AND MITIGATION

Construction and operation of the proposed Project would result in impacts to soils, groundwater, surface water, wetlands, vegetation, wildlife, fisheries, threatened and endangered species, cultural resources, land use, and air and noise quality.

Construction of the proposed pipeline would cross 309 surface waterbodies. Conventional open-cut construction techniques would be used to cross all but 29 of these waterbodies, which would instead be crossed using horizontal directional drills (HDD). Proposed HDDs would include four major and/or navigable streams, two Nationwide Rivers Inventory (NRI)-listed streams (the Strong and the Chickasawhay Rivers), the rivers most likely to contain habitat for federally listed fish species (Dabbs Creek, West Tallahalla Creek, the Bucatunna River, and the Leaf River), and the three impaired waterbodies that occur along the proposed Project route.

Construction of the proposed Project would affect 145 wetlands, disturbing approximately 75.76 acres. The most significant impacts to wetlands resulting from construction and operation of the proposed Project would be the long-term impacts to forested wetlands. Specifically, 42.67 acres would be cleared during construction, converted to emergent and scrub-shrub wetlands, and maintained in those states within the permanent right-of-way during operation.

In consultation with the FWS, we identified 10 federally listed threatened and endangered species that could be affected by the proposed Project. Based on our review of these species, we have determined that construction and operation of the proposed Project may affect, but is not likely to adversely affect nine federally listed threatened and endangered species. The FWS concurred that the proposed Project is not likely to jeopardize the continued existence of the gopher tortoise and is not likely to adversely modify its designated critical habitat.

With the exception of recently proposed route modifications, aboveground facilities, and additional temporary work spaces, which are still under review by the respective state historical preservation offices, construction and operation of the proposed Project would not affect cultural resources.

Construction and operation of the proposed Project would temporarily and permanently affect several land uses, resulting in short- and long-term impacts to forests, timber production, and special interest areas. The proposed Project would cross the NRI-listed Strong and Chickasawhay Rivers, potentially affecting boating activities for short periods during hydrostatic test water withdrawal.

To minimize and mitigate the environmental impacts of constructing and operating the proposed Project, Gulf South has developed and would implement several proposed measures and plans, including but not limited to the following:

- Upland Erosion Control, Revegetation, and Maintenance Plan (Plan);
- Wetland and Waterbody Construction and Mitigation Procedures (Procedures);
- Plan for the Unanticipated Discovery of Contaminated Media;
- Spill Prevention, Control, and Countermeasures Plan;
- Plan for the Containment of Inadvertent Release of Drilling Mud During Horizontal Directional Drilled Wetland and Waterbody Crossings; and
- Plan for the Unanticipated Discovery of Historic Properties, Human Remains, or Potential Paleontological Evidence During Construction.

Based on our review of the measures described in Gulf South's proposed plans and Procedures, we have determined that they are acceptable and consistent with our guidance documents regarding erosion control and mitigation of impacts to wetlands and waterbodies. In addition to the implementation of these measures and plans, Gulf South would be required to obtain other federal, state, and local permits, and authorizations that would contain measures to further minimize and mitigate environmental impacts resulting from construction and operation of the proposed Project.

To ensure that Gulf South's proposed minimization and mitigation measures would result in the proposed Project having limited adverse environmental impacts, we recommended Gulf South address the following outstanding resource issues: NRI-listed streams; siltation of adjacent and downstream ponds; waterbodies potentially affected by aboveground facilities; provisional open-cut crossing plans for streams Gulf South plans to drill; wetland areas containing mature cypress/tupelo trees; coordination with resource agencies for revegetation, exotic weed control, and mitigation of impacted CRP lands; reducing permanent right-of-way width and overlap of adjacent paralleled right-of-ways; reducing visual impacts of aboveground facilities; and potential impacts to airport operations; and conducting noise surveys for compressor stations. We further recommended that Gulf South not begin construction until it has

completed consultation under Section 7 of the Endangered Species Act concerning the Project's impacts with the FWS regarding threatened and endangered species and with the respective State Historic Preservation Officers regarding cultural resource sites under Section 106 of the National Historic Preservation Act.

Detailed descriptions of environmental impacts, including a description of cumulative impacts, Gulf South's proposed impact avoidance and mitigation measures, and our recommendations to further minimize and mitigate impacts, are included in Sections 3.0 and 4.0 of this document.

ALTERNATIVES CONSIDERED

We have evaluated the No Action Alternative, the Postponed Action Alternative, alternative energy sources, the potential effects of energy conservation, system alternatives, route variations, and aboveground facility site alternatives to determine whether they would be technically and economically feasible and environmentally preferable to the proposed action. In this analysis, we considered the potential impacts to environmental resources and land uses. We evaluated route variations that would avoid or minimize impacts to environmental resources such as wetlands and waterbodies, and land uses such as orchards, timber production, cultural resource sites, and residences. None of the alternatives evaluated offered significant environmental benefits when compared to the proposed Project with our recommended mitigation measures. As such, we did not recommend the adoption of any of the alternatives evaluated.

CONCLUSION

As part of our review, we developed measures that we believe would appropriately and reasonably avoid, minimize, or mitigate environmental impacts associated with construction and operation of the proposed Project. We recommend that these measures be attached as conditions to any authorization issued by the Commission. We conclude that if the proposed Project is found to be in the public interest and is constructed and operated in accordance with Gulf South's proposed minimization and mitigation measures and our recommended mitigation measures, the proposed facilities would result in limited adverse environmental impacts. In support of this conclusion, we offer the following:

- The proposed pipeline route would be collocated with or parallel to existing rights-of-way for approximately 73 miles, or about 66 percent of the proposed Project;
- Gulf South would implement its Plan and Procedures, which would minimize and mitigate impacts to natural resources during construction and operation of the proposed Project;
- We are recommending that Gulf South limit the width of its permanent right-of-way to 50 feet; use portions of existing natural gas pipeline permanent rights-of-way during construction, if feasible; and limit the width of its construction right-of-way in areas requiring two-tone construction techniques to further reduce impacts;
- Gulf South has developed site-specific crossing plans for significant wetland areas containing mature tupelo trees and would compensate for all unavoidable wetland impacts; and
- Gulf South would implement an environmental inspection and monitoring program that would ensure compliance with all proposed and recommended mitigation measures.

1.0 INTRODUCTION

On December 11, 2006, the Federal Energy Regulatory Commission (FERC or Commission) received an application from the Gulf South Pipeline Company, LP (Gulf South) pursuant to Section 7(c) of the Natural Gas Act and Part 157 of the Commission's regulations for a Certificate of Public Convenience and Necessity (Certificate) to construct, operate, and maintain several natural gas facilities. As modified by subsequent filings, Gulf South proposes to construct and operate:

- an approximately 110.8-mile-long, 42-inch-diameter natural gas pipeline extending easterly from Simpson County, Mississippi, to Choctaw County, Alabama;
- three new compressor stations—the Delhi Compressor Station in Richland Parish, Louisiana; the Harrisville Compressor Station in Simpson County, Mississippi; and the Destin Compressor Station in Clarke County, Mississippi;
- other ancillary facilities, including five meter and regulation (M/R) facilities, eight mainline valves (MLV), one side valve, and two pig launcher and/or receiver facilities.

The Commission's staff has prepared this Environmental Impact Statement (EIS) to analyze the environmental impacts that would likely occur as a result of the construction and operation of these proposed facilities, collectively referred to as the Southeast Expansion Project (Project).

1.1 PROJECT PURPOSE AND NEED

Gulf South indicates that the purpose of this proposed Project is to provide producers in eastern Texas and northern Louisiana an eastern market outlet for production from CenterPoint Energy Gas Transmission Company (CenterPoint) in the Perryville, Louisiana, area. The proposed Project would provide access to Florida markets via an interconnect with Destin Pipeline Company, LLC (Destin), and to northeast markets via an interconnect at Transcontinental Pipe Line Company (Transco) Station 85. Construction and operation of the proposed Project would help meet growing energy demands and would enhance reliability by providing increased access to domestic natural gas supplies.

The Energy Information Administration (EIA) estimates that total energy consumption in the United States will increase from 100.2 quadrillion British thermal units (BTU) per year in 2005 to 131.2 quadrillion BTU per year in 2030 (EIA, 2007). To maintain pace with growing energy demands, the EIA anticipates that consumption of natural gas in the United States will grow from 22.0 trillion cubic feet (Tcf) per year in 2005 to 26.1 Tcf by 2030. The growth in natural gas demand is being driven primarily by increased use of natural gas for electricity generation and industrial applications (EIA, 2007).

The United States' natural gas supply currently comes from three main sources: domestic production, pipeline imports from Canada and Mexico, and import of liquefied natural gas (LNG). Net pipeline imports of natural gas from Canada and Mexico are expected to decline in coming years, and although LNG represents an increasingly important source of natural gas, LNG imports are only expected to account for about 15 percent of the total United States natural gas consumption by 2030. Domestic production of natural gas will continue to account for the majority of total United States consumption, with onshore production expected to constitute the bulk of that supply, growing to 20.6 Tcf by 2030 (EIA, 2007). Onshore production of natural gas from unconventional sources (e.g., shale, tight sands, coal bed methane) is expected to be a major contributor to that growth. The EIA (2007) projects that

unconventional natural gas production in the lower 48 states will account for about 50 percent of the total domestic production by 2030.

1.2 PURPOSE AND SCOPE OF THIS EIS

The FERC is the primary federal agency responsible for evaluating and authorizing the siting and construction of interstate natural gas pipeline facilities. As such, the FERC is the lead federal agency responsible for the preparation of this EIS, which is being completed to fulfill the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the FERC's regulations implementing NEPA (18 CFR 380). Consistent with NEPA and their respective responsibilities and regulations, the U.S. Fish and Wildlife Service (FWS) and the U.S. Army Corps of Engineers (COE) are federal cooperating agencies for the development of this EIS.

Our[1] principal purposes for preparing this EIS are to:

- identify and assess the potential direct, indirect, and cumulative impacts on the natural and human environment that would result from the implementation of the proposed action;
- describe and evaluate reasonable alternatives to the proposed action that would avoid or minimize adverse effects on the natural and human environment;
- identify and recommend specific mitigation measures, as necessary, to minimize significant environmental impacts;
- facilitate public involvement in identifying the significant environmental impacts.

This EIS describes the affected environment as it currently exists, and the environmental consequences of constructing and operating the proposed Project; it compares the proposed Project's potential impacts to those of alternatives; and it presents our conclusions and recommended mitigation measures.

1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

Several federal, state, and local regulatory agencies have permitting or approval authority or consultation requirements pertinent to portions of the proposed Project (see Table 1.3-1). Certificates issued by the Commission stipulate that applicants should cooperate with state and local agencies. However, any state or local permits pertaining to the proposed Project facilities must be consistent with the conditions of any Certificate issued by the Commission. The FERC encourages cooperation between interstate pipeline companies and local authorities, but state and local authorities may not prohibit or unreasonably delay the construction or operation of facilities approved by the FERC through application of state and local laws.

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[1] The pronouns "we," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects (OEP), part of the FERC staff.

TABLE 1.3-1
Summary of Major Permits, Approvals, and Consultations for the Proposed Southeast Expansion Project

Agency	Permit/Clearance/Approval	Agency Action (Status)
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act	Determine whether the construction and operation of the proposed natural gas pipeline is in the public interest. (Application submitted on December 11, 2006)
Advisory Council on Historic Preservation	Consultation under Section 106 of the National Historic Preservation Act (NHPA)	Has the opportunity to comment on the undertaking. (Consultation ongoing)
U.S. Army Corps of Engineers (COE) Mobile District	Permits under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899	Consider issuance of Section 404 permits for the placement of dredge or fill material into all waters of the United States, including wetlands. Consider issuance of Section 10 permit for work in or affecting navigable waters of the United States. (Permit application submitted May 2007, receipt anticipated August 2007)
COE Vicksburg District	Permits under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899	Consider issuance of Section 404 permits for the placement of dredge or fill material into all waters of the United States, including wetlands. Consider issuance of Section 10 permit for work in or affecting navigable waters of the United States. (Permit application submitted May 2007; receipt anticipated August 2007)
U.S. Fish and Wildlife Service (FWS) Louisiana	Consultation under Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	Consult on endangered and threatened species and migratory birds; general consultation regarding conservation of fish and wildlife resources. (Consultation initiated November 2006; clearance received March 27, 2007)
FWS Mississippi	Consultation under Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	Consult on endangered and threatened species and migratory birds; general consultation regarding conservation of fish and wildlife resources. (Consultation initiated July 2006; clearance anticipated September 2007)
FWS Alabama	Consultation under Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	Consult on endangered and threatened species and migratory birds; general consultation regarding conservation of fish and wildlife resources. (Consultation initiated July 2006; clearance anticipated September 2007)
National Park Service	Consultation under the Wild and Scenic Rivers Act	Review for impacts on designated Natural Resource Inventory Streams. (Consultation initiated May 2007; consultation ongoing)

TABLE 1.3-1
Summary of Major Permits, Approvals, and Consultations for the Proposed Southeast Expansion Project

Agency	Permit/Clearance/Approval	Agency Action (Status)
U.S. Environmental Protection Agency (EPA)	Compliance with Sections 401, 402, and 404 of the Clean Water Act	Consider issuance of water use and crossing, National Pollutant Discharge Elimination System (NPDES) discharge, stormwater, and wetland dredge-and-fill permits. Permitting authority delegated to the states. (Consultation is ongoing)
U.S. Department of Transportation Federal Highway Administration	Encroachment permit	Consider issuance of permit to work within road right-of-way. (Consultation is ongoing, permit application pending)
State of Alabama		
Alabama Department of Conservation and Natural Resources (ADCNR)	Threatened and Endangered Species Consultations	Review and comment on the impacts to state listed species. (Consultation initiated July 2006; clearance received April 2007)
ADCNR, Alabama Freshwater and Fisheries Division	Fisheries, Lands, Habitats of Concern, Water Resources Consultations	Review and comment on the impacts to state-listed species. (Consultation initiated July 2006; clearance received March 2007)
Alabama Department of Environmental Management (ADEM)	Section 401 Water Quality Certification	Consider issuance of permit for stream and wetland crossing in conjunction with COE Section 404 permit. (Permit application submitted May 2007; receipt anticipated August 2007)
ADEM	Groundwater, Sensitive Waterbody and Surface Water Resources Consultations	Consult on the impacts to state groundwater and waterbodies. (Consultation initiated July 2006; permit receipt anticipated)
ADEM	NPDES – Hydrostatic Test Discharge Permit	Consider issuance of a Section 402 permit regulation hydrostatic test water discharge, and construction dewatering to waters of the state. (Consultation ongoing; permit application pending)
ADEM	NPDES – Construction Stormwater Discharge Permit	Consider issuance of a Section 402 permit regulation hydrostatic test water discharge, and construction dewatering to waters of the state. (Consultation ongoing; permit application pending)
Alabama Historic Commission	Section 106, National Historic Preservation Act	Review and comment on project activities potentially affecting cultural resources. (Consultations initiated July 2006; clearance anticipated)
Alabama Department of Transportation	Road Crossing Permits	Consider issuance of permits to cross and work within the right-of-way of state highways. (Consultation is ongoing, permit application pending)

TABLE 1.3-1
Summary of Major Permits, Approvals, and Consultations for the Proposed Southeast Expansion Project

Agency	Permit/Clearance/Approval	Agency Action (Status)
State of Mississippi		
Mississippi Museum of Natural Science (MMNS)	Threatened and Endangered Species Consultations	Review and comment on the impacts to state-listed species. (Consultation initiated July 2006; clearance received April 2007)
MMNS, Department of Wildlife, Fisheries and Parks	Fisheries, Land, Habitats of Concern, Water Resources Consultations	Review and comment on the impacts to state-listed species. (Consultation initiated July 2006; clearance received April 2007)
Mississippi Department of Environmental Quality (MDEQ)	Section 401 Water Quality Certification	Consider issuance of a permit for stream and wetland crossing in conjunction with ACE Section 404 permit. (Permit application submitted May 2007; receipt anticipated August 2007)
MDEQ	Groundwater, Sensitive Waterbody and Surface Water Resources Consultations	Consult on the impacts to state groundwater and waterbodies. (Consultation initiated July 2006; clearance anticipated)
MDEQ	NPDES – Hydrostatic Test Discharge Permit	Consider issuance of a Section 402 permit regulation hydrostatic test water discharge, and construction dewatering to waters of the state. (Consultation ongoing; permit application pending)
MDEQ	Air Quality Permit	Consider issuance of a permit to construct and operate facilities with the potential for air emissions. (Permit application submitted February 2007; permit receipt anticipated August 2007)
Mississippi Department of Transportation	Road Crossing Permits	Consider issuance of permits to cross and work within the right-of-way of state highways. (Consultation ongoing, permit application pending)
Mississippi Department of Archives and History, Division of Historic Preservation	Section 106, National Historic Preservation Act	Review and comment on project activities potentially affecting cultural resources. (Consultations initiated July 2006; clearance anticipated)
State of Louisiana		
Louisiana Department of Wildlife and Fisheries (LDWF)	Threatened and Endangered Species Consultations	Review and comment on the impacts to state-listed species. (Consultation complete)
Louisiana Department of Environmental Quality (LDEQ)	Air Quality Permit	Consider issuance of a permit to construct and operate facilities with the potential for air emissions. (Permit application submitted February 2007; permit receipt anticipated August 2007)
LDEQ	Hydrostatic Test Water Withdrawal Permit	Consider issuance of a permit for the withdrawal of hydrostatic water. (Consultation ongoing; permit application pending)

TABLE 1.3-1
Summary of Major Permits, Approvals, and Consultations for the Proposed Southeast Expansion Project

Agency	Permit/Clearance/Approval	Agency Action (Status)
LDEQ	NPDES – Hydrostatic Test Water Discharge Permit	Consider issuance of a Section 402 permit regulation hydrostatic test water discharge, and construction dewatering to waters of the state. (Consultation ongoing; permit application pending)
Section 106, National Historic Preservation Act	Louisiana Department of Culture, Recreation, and Tourism	Review and comment on project activities potentially affecting cultural resources. (Consultations initiated November 2006; clearance received December 2006)

As the lead federal agency responsible for the review of the proposed Project, the FERC is required to comply with Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic Preservation Act (NHPA). Compliance with the Clean Water Act (CWA), the Rivers and Harbors Act of 1899, and the Clean Air Act (CAA) has also been taken into account in the preparation of this document.

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by a federal agency (for example, the FERC) should not "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined...to be critical" (16 United States Code (USC) §1536[a][2]). The lead federal agency for a proposed project is required to consult with the FWS to determine whether any species federally listed or proposed for listing as endangered or threatened or their designated critical habitat occur in the vicinity of the proposed project. If the lead federal agency determines that these species or habitats may be affected by the proposed project, it is required to prepare a biological assessment to identify the nature and extent of these effects, and to recommend measures that would avoid the habitat and/or species, or would reduce potential impacts to acceptable levels. Our compliance with Section 7 of the ESA is provided in Section 3.7 of this EIS.

Section 106 of the NHPA requires the lead federal agency to take into account the effects of its undertakings on properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP), including prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance, and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. The FERC has requested that Gulf South, as a non-federal party, assist in meeting the FERC's obligations under Section 106 by preparing the necessary information and analyses as required by the ACHP procedures in 36 CFR 800. Additional information on Section 106 consultation is provided in Section 3.10 of this EIS.

Gulf South is required to comply with Sections 401, 402, and 404 of the CWA. The EPA has delegated water quality certification (Section 401) to the jurisdiction of individual state agencies, but the EPA may assume this authority if no state program exists, if the state program is not functioning adequately, or at the request of a state. Water used for hydrostatic testing of pipelines that is point-source discharged into waterbodies requires a National Pollutant Discharge Elimination System (NPDES) permit (Section 402) issued by the state with EPA oversight.

The COE has responsibility for determining compliance with the regulatory requirements of Section 404 of the CWA. The EPA also independently reviews Section 404 wetland dredge-and-fill

applications for the COE and has Section 404(c) veto power for wetland permits issued by the COE. The Section 404 permitting process regulates the discharge of dredge or fill material associated with the construction of pipelines across streams and in wetlands. Before an individual Section 404 permit can be issued, the CWA requires completion of a Section 404(b)(1) guidelines analysis. The FERC, in the NEPA review required to prepare this EIS, has analyzed the technical issues required for the Section 404(b)(1) guidelines analysis, including analysis of natural resources and cultural resources that would be affected by the proposed Project, as well as analyses of alternatives and route variations that would eliminate or minimize the discharge of fill material into waters of the United States. The COE, as a federal cooperating agency, may use the EIS to support its decision on the Section 404 permit for the proposed Project. Water resources and wetlands are discussed in Section 3.3 and Section 3.4, respectively.

In addition to its CWA responsibilities, the COE has jurisdiction over Section 10 permits. Section 10 permits would be required for all construction activities in navigable waterways under the Rivers and Harbors Act of 1899.

Ambient air quality is protected by federal regulations under the CAA. These regulations include compliance under the new source performance standards (NSPS) and the requirements for the prevention of significant deterioration (PSD). The federal permitting process for the CAA has been delegated to individual state agencies. Although applications are reviewed by both the states and the EPA, the states would determine the need for NSPS or PSD permits. Air quality and applicable regulations are discussed further in Section 3.11.1 of this EIS.

1.4 PUBLIC REVIEW AND COMMENT

On June 20, 2006, Gulf South filed a request with the FERC to implement the Commission's Pre-filing Review Process for the Southeast Expansion Project. We granted Gulf South's request to use the Pre-filing Review Process on June 28, 2006, and established a Pre-filing docket number (PF06-31-000) to place information related to the proposed Project into the public record. The Pre-filing Review Process was established to encourage the early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the FERC.

As part of their outreach efforts, Gulf South mailed notification letters to landowners and to government and agency officials, and notified the general public of the proposed Project, inviting them to attend open houses held on September 6, 7, and 14, 2006, to learn about the proposed Project and to ask questions and express their concerns. Notifications of the open houses also were published in local newspapers. The open houses were held in Mendenhall and Heidelberg, Mississippi, and in Butler, Alabama, on September 6, 7, and 14, 2006, respectively. The FERC staff attended the open houses to explain the environmental review process to interested stakeholders and accept comments about the proposed Project. The questions and concerns raised by the public at the open houses are addressed in this EIS.

As part of the Pre-filing Review Process, on September 5, 2006, we issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Southeast Expansion Project, Request for Comments on Environmental Issues*, and *Notice of Public Scoping Meetings* (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; local libraries and newspapers; and other interested parties. The NOI, which was published in the Federal Register, provided a summary of the proposed Project, outlined our NEPA-required environmental review process, provided a list of the then currently identified environmental issues, and requested comments on the scope of the analysis for the Draft EIS. The NOI also listed the locations, dates, and times of three public scoping meetings that

were sponsored by the FERC to give the general public an opportunity to learn more about the proposed Project and to comment on environmental issues to be addressed in the Draft EIS. These meetings were held in Mendenhall and Heidelberg, Mississippi, and in Butler, Alabama, on September 19, 20, and 21, 2006, respectively.

As a result of engineering changes and customer requests made between the September 2006 FERC scoping meetings and the development of the Draft EIS, Gulf South added two additional compressor stations (Delhi and Destin compressor stations) to the proposed Project. To ensure that the public surrounding these additional compressor stations had adequate knowledge of the compressor station additions and an adequate avenue through which to comment, the FERC issued a letter on November 28, 2006, to those landowners (a total of 33) within a 0.5-mile radius of each of these additional compressor stations.

The transcripts of all scoping meetings, as well as all written comments received before and after the scoping meetings, are part of the public record for the proposed Project and are available for viewing on the FERC Internet website (www.ferc.gov). During the Pre-filing and scoping periods for the proposed Projects, we received a total of 25 verbal and written comment letters from members of the general public and federal and state resource agencies. The issues and concerns identified by commentors during the public scoping process for the proposed Project are summarized in Table 1.4-1, which also identifies the EIS section in which these issues are addressed.

In addition to the public notice and scoping process discussed above, the FERC conducted agency consultations and participated in interagency meetings to identify issues that should be addressed in the EIS. These activities included participation in interagency meetings on December 5, 2006, with the FWS, Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) and the Mississippi Natural Heritage Program (MNHP); on December 6, 2006, with the Mississippi Secretary of State Lead Council; on December 6, 2006, with the MDWFP and COE; on December 8, 2006, with the Alabama Department of Environmental Management (ADEM); and on December 8, 2006, with the Alabama Department of Conservation and Natural Resources (ADCNR).

TABLE 1.4-1
Issues Identified and Comments Received During the Public Scoping Process for the Proposed Southeast Expansion Project

Issue/Specific Comments	EIS Section Addressing Comment
General	
Project purpose and need	1.1
Public notification requirements	1.3, 1.4
Describe construction methods and land requirements	2.2, 2.3, 3.8
Maintenance procedures to be implemented during operation, including vegetation management and inspections	2.5, 2.6, 3.5, 3.12
Potential damage to existing utilities, including water lines and irrigation systems	2.3

TABLE 1.4-1
Issues Identified and Comments Received During the Public Scoping Process for the Proposed Southeast Expansion Project

Issue/Specific Comments	EIS Section Addressing Comment
Geology and Soils	
Impacts to soils, including compaction, drainage, and erosion potential following construction, and associated mitigation	3.2
Water Resources	
Construction-related impacts to irrigation wells; potential for contamination; and monitoring requirements	3.3.1
Impacts to springs	3.3
Hydrostatic water withdrawals and the impact to streams	2.3, 3.3.2
Vegetation and Wetlands	
Avoidance and minimization of impacts to sensitive habitats, including wetlands, bottomland hardwoods, riparian habitats, and native prairies and rangelands during construction and maintenance activities; mitigation for Project-related effects	3.3, 3.4, 3.5, 3.6
Use of native vegetation and seed mixes to restore disturbed areas	3.2, 3.4, 3.5
Fish and Wildlife Resources	
Impacts to fish and wildlife habitat	3.4, 3.5, 3.6
Collocation with other existing rights-of-way to minimize habitat fragmentation	3.4, 3.5, 3.6
Threatened, Endangered, and Special Status Species	
Potential impacts to state and federally protected species or their habitat	3.7
Land Use, Recreation and Special Interest Areas, and Visual Resources	
Impacts to affected property, including agriculture, silviculture activities, and property access during operation	2.3, 3.5, 3.8
Proximity of pipeline to occupied structures	3.8
Reduced property access during construction activities in regard to livestock	2.3, 3.8
Allowable uses/restrictions on future development along the permanent right-of-way	3.8
Impacts of multiple pipeline and utility rights-of-way	3.8, 4.4
Air Quality and Noise	
Potential air emission impacts from compressor stations during operation	3.11.1
Potential impacts from construction-related noise	3.11.2
Potential noise impacts from compressor stations during operations	3.11.2
Cultural Resources	
Identification, evaluation, and protection of potentially affected cultural resources	3.10

TABLE 1.4-1
Issues Identified and Comments Received During the Public Scoping Process for the Proposed Southeast Expansion Project

Issue/Specific Comments	EIS Section Addressing Comment
Native American notification and consultation	3.10
Socioeconomics	
Potential effect on property values	3.9
Loss of timber production values for affected silviculture operations	3.8, 3.9
General economic effects to agricultural operations	3.9
Potential for landowner liability associated with accidental pipeline damage; associated insurance premium effects	3.9
Economic impact on the local economy	3.9
Responsibility for payment of property taxes along pipeline right-of-way	3.9
Reliability and Safety	
Public safety; risk of leak, explosion, or catastrophic accident	3.12
Stability and integrity of pipeline; potential for damage from outside forces, such as agricultural operations and equipment	2.6, 3.12
Cumulative Impacts	
Cumulative impacts of similar proposed pipeline projects	3.13
Alternatives	
Analysis of alternative pipeline routes and aboveground facility locations, including alternative compressor station sites	4.3, 4.4, 4.5
Use of alternative fuels to reduce need for the proposed Project	4.1

The FERC prepared a Draft EIS for the Southeast Expansion Project and issued a Notice of Availability (NOA) for the Draft EIS on April 13, 2007. The Draft EIS was also filed with the EPA and a formal notice was published in the Federal Register (FR) on April 20, 2007, indicating that the Draft EIS was available and had been mailed to individuals and organizations on the distribution list prepared for the proposed Project (see Appendix A). In accordance with the CEQ regulations, the NOA and FR notice established a 45-day comment period ending on May 29, 2007; described procedures for filing comments on the Draft EIS; and announced the time, dates, and locations of public comment meetings held to receive comments on the Draft EIS. These announcements also described how additional Project information could be obtained from the Commission's Office of External Affairs and on the FERC's Internet website.

During the Draft EIS comment period, the FERC conducted public comment meetings in Mendenhall and Heidelberg, Mississippi, and Butler, Alabama, on May 8, 9, and 10, 2007, respectively. The meetings provided interested groups and individuals the opportunity to present oral comments on the FERC staff's analysis of the environmental impacts of the proposed Project as described in the Draft EIS. Eight individuals provided oral comments at the public meetings. In addition, we received written

comments on the Draft EIS from two federal agencies, the DOI and EPA. The public comment meeting transcripts and all written comments received on the Draft EIS are part of the public record for the Project. Comments received on the Draft EIS and the FERC staff's responses to those comments are provided in Appendix L of this EIS. Changes were also made in the text of the Final EIS in response to comments on the Draft EIS and as a result of updated information that became available following issuance of the Draft EIS.

The Final EIS was mailed to the agencies, individuals, and organizations on the mailing list and submitted to the EPA for issuance of a formal public notice of availability. In accordance with CEQ's regulations implementing NEPA, no agency decision on a proposed action may be made until 30 days after the EPA publishes a notice of availability of a Final EIS. However, the CEQ regulations provide an exception to this rule when an agency decision is subject to a formal internal process that allows other agencies or the public to make their views known. In such cases, the agency decision may be made at the same time the notice of the Final EIS is published, allowing both periods to run concurrently. Should the FERC issue Gulf South authorizations for the proposed Project, it would be subject to a 30-day rehearing period. Therefore, the Commission could issue its decision concurrently with the EPA's notice of availability.

1.5 NON-JURISDICTIONAL FACILITIES

Under Section 7 of the NGA, the FERC is required to consider, as part of a decision to certificate jurisdictional facilities, all facilities including non-jurisdictional facilities that are directly related to the proposed Project where there is sufficient federal control and responsibility to warrant environmental analysis as part of this proceeding. The jurisdictional facilities for the proposed Project are described in detail in Section 2.1 and are addressed throughout this EIS. Non-jurisdictional facilities are those facilities that would be constructed upstream or downstream of the jurisdictional facilities for the purpose of delivering, receiving, or using the proposed gas volumes. Non-jurisdictional facilities typically include major power facilities, such as cogeneration plants, as well as less significant facilities, such as lateral pipeline connections.

Electrical power lines would be constructed to provide electrical service to the three new compressor stations. These facilities would be constructed and operated by Entergy, Southern Pine EPA, and East Mississippi Power to provide power to the Delhi, Harrisville, and Destin compressor stations, respectively. These electrical power lines have been identified as non-jurisdictional facilities.

We use a "four-factor test" to determine whether there is sufficient federal control and responsibility over a project as a whole to warrant environmental analysis of project-related non-jurisdictional facilities. These factors are:

- whether the regulated activity comprises "merely a link" in a corridor-type project (e.g., a transportation or utility transmission project);
- whether there are aspects of the non-jurisdictional facility in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity;
- the extent to which the entire Project would be within the Commission's jurisdiction; and
- the extent of cumulative federal control and responsibility.

With regard to the first factor, the jurisdictional facilities, the proposed Project is clearly a link in a natural gas project. The proposed Project would serve as a new pipeline transportation system between the producers and consumers of natural gas. As a common carrier, Gulf South serves only to transport natural gas for its customers and does not sell gas to consumers. Therefore, this factor supports examining the non-jurisdictional facilities.

With regard to the second factor, the proposed Project would receive electricity from non-jurisdictional facilities, but the design and route of the proposed Project has not been uniquely influenced by the location or configuration of the non-jurisdictional facilities. The locations of the non-jurisdictional facilities have not been established, thus these facilities have had no effect on the location of the Project facility configuration. Therefore, this factor does not support extending the scope of the environmental review.

The third factor weighs the extent to which the entire Project would be within the FERC's jurisdiction. Electrical facilities are regulated by state and local permitting agencies. The FERC has no authority over the permitting, licensing, funding, construction, or operation of these non-jurisdictional facilities. Therefore, this factor weighs against extending the scope of the environmental review.

Finally, the fourth factor weighs the extent of cumulative federal control and responsibility over the non-jurisdictional facilities. Federal control is determined by the amount of federal financing, assistance, direction, regulation, or approval inherent in a project. The non-jurisdictional facilities are private construction projects under state and local jurisdiction. The federal government has no financial involvement, and no federal lands are involved. Based on the available information, federal agencies are expected to have either very limited or no involvement in the approval of the non-jurisdictional facilities. Therefore, cumulative federal control is minimal, and this factor does not warrant extending the FERC's environmental review.

We have applied the four-factor test to the proposed Southeast Expansion Project and have determined that only one factor favors examining the identified non-jurisdictional facilities. Therefore, insufficient justification exists to warrant extension of the FERC's environmental review to include the proposed electrical power lines.

2.0 PROPOSED ACTION

Gulf South proposes to construct, own, operate, and maintain interstate natural gas pipeline and associated ancillary facilities in Louisiana, Mississippi, and Alabama as described below and depicted in Figure 2.1-1.

2.1 PROPOSED FACILITIES

Gulf South proposes to construct and operate a 42-inch-diameter natural gas pipeline that would extend from existing Gulf South pipeline facilities in Simpson County, Mississippi, approximately 111 miles east to Transco's existing pipeline facilities in Choctaw County, Alabama. This 42-inch-diameter natural gas pipeline would interconnect with natural gas pipelines operated or under construction by CenterPoint, Southern Natural Gas Company (Southern Natural), Tennessee Gas Pipeline Company (Tennessee Gas), Destin, and Transco. This proposed pipeline would have a maximum allowable operating pressure (MAOP) of 1,480 pounds per square inch gauge (psig) and would be capable of receiving, transporting, and delivering up to 1.272 billion cubic feet per day (Bcf/d) of natural gas.

Throughout this EIS, the locations of specific features along the proposed pipeline, such as project facilities and environmental resources, are identified by milepost (MP). Table 2.1-1 provides the location, MP, and length of pipeline facilities associated with the proposed Project. The general location of the proposed Project facilities is shown in Figure 2.1-1, and Appendix B and H of this EIS provides more detailed facility location maps.

TABLE 2.1-1
Pipeline Facilities for the Proposed Southeast Expansion Project

County	Milepost		Length (miles)
	Begin	End	
Mississippi			
Simpson County	0.0	29.3	29.3
Smith County	29.3	49.5	20.2
Jasper County	49.5	75.5	26.0
Clarke County	75.5	104.4	28.9
Alabama			
Choctaw County	104.4	110.8	6.4
Total			**110.8**

In addition to the proposed pipeline, Gulf South would also construct and operate three compressor stations, five M/R stations, eight MLV, one side valve, and two pig[1] launcher/receiver facilities. Table 2.1-2 identifies and describes the aboveground facilities associated with the proposed Project and provides location and MP information for these facilities.

[1] A pig is a mechanical tool used to clean and inspect the interior of a pipeline.

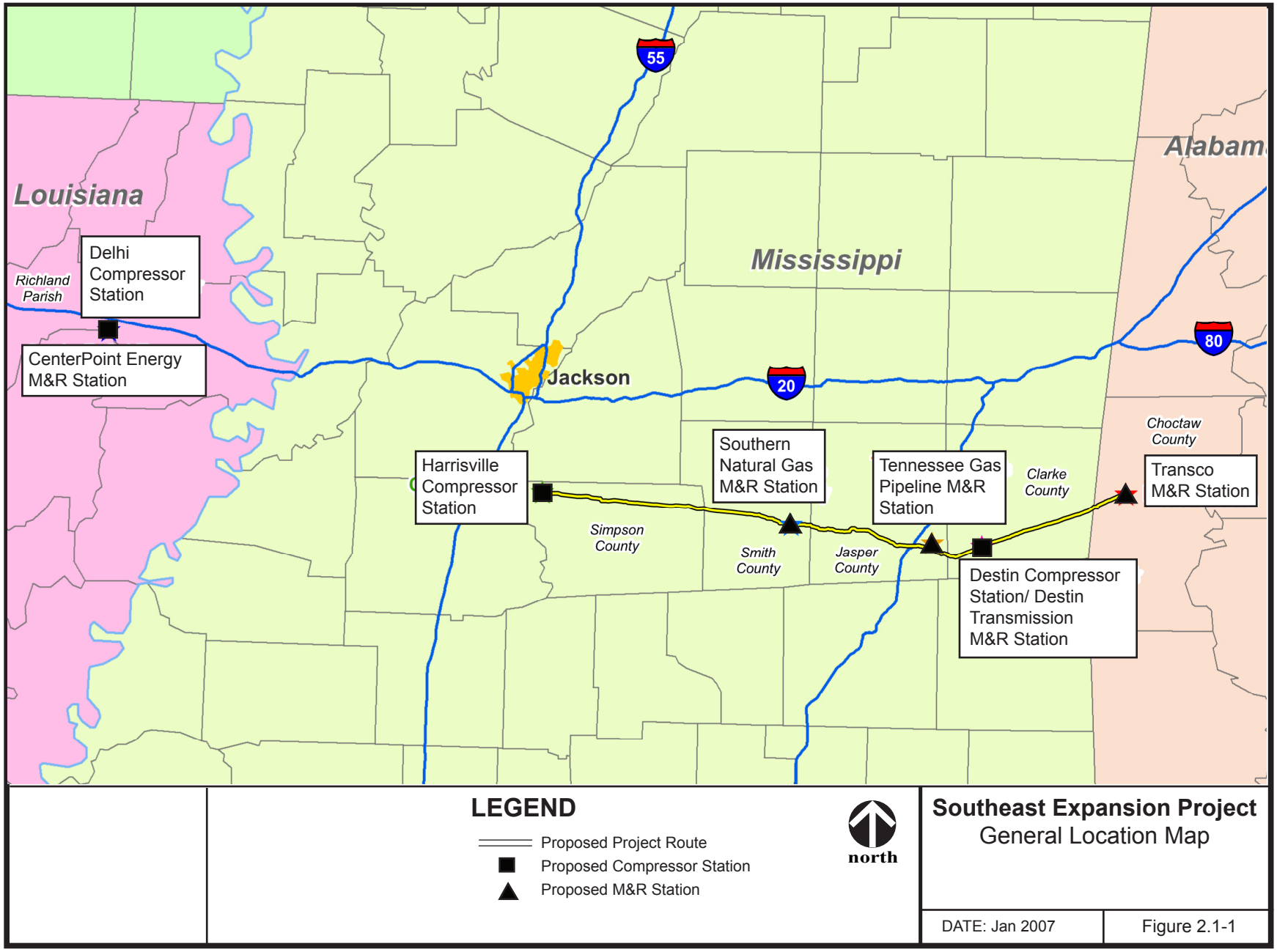
Louisiana
Mississippi
Alabam
Richland Parish
Delhi Compressor Station
CenterPoint Energy M&R Station
Jackson
55
20
80
Harrisville Compressor Station
Simpson County
Southern Natural Gas M&R Station
Smith County
Jasper County
Tennessee Gas Pipeline M&R Station
Clarke County
Choctaw County
Transco M&R Station
Destin Compressor Station/ Destin Transmission M&R Station
LEGEND
Proposed Project Route
Proposed Compressor Station
Proposed M&R Station
north
Southeast Expansion Project
General Location Map
DATE: Jan 2007
Figure 2.1-1

TABLE 2.1-2
Aboveground Facilities for the Proposed Southeast Expansion Project

Project Component	County/Parish	Milepost	Description
Compressor Stations			
Delhi Compressor Station	Richland, LA	N/A	Install 18,940 hp of compression. 89.5 miles northwest of MP 0.0.
Harrisville Compressor Station	Simpson, MS	0.2	Install 18,940 hp of compression
Destin Compressor Station	Clarke, MS	82.9	Install 7,100 hp of compression
Meter and Regulation (M/R) Stations			
CenterPoint M/R Station	Richland, LA	N/A	Install M/R facilities and tie-in to CenterPoint
Southern Natural M/R Station	Smith, MS	45.7	Install M/R facilities and tie-in to Southern Natural
Tennessee Gas M/R Station	Jasper, MS	72.5	Install M/R facilities and tie-in to Tennessee Gas
Destin M/R Station	Clarke, MS	82.9	Install M/R facilities and tie-in to Destin
Transco M/R Station	Choctaw, AL	110.8	Install M/R facilities and tie-in to Transco
Mainline Valves (MLV) and Other Facilities			
MLV No.1 w/Pig Launcher	Simpson, MS	0.2	Install mainline valve with launcher assembly within permanent right-of-way
MLV No.2	Simpson, MS	14.9	Install mainline valve within permanent right-of-way
MLV No.3	Smith, MS	30.3	Install mainline valve within permanent right-of-way
MLV No.4	Smith, MS	45.7	Install mainline valve within permanent right-of-way
MLV No.5	Jasper, MS	60.0	Install mainline valve within permanent right-of-way
Side Valve	Jasper, MS	72.4	Install side valve within permanent right-of-way for potential future connection with Petal Gas
MLV No.6	Jasper, MS	75.4	Install mainline valve within permanent right-of-way
MLV No.7	Clarke, MS	91.3	Install mainline valve within permanent right-of-way
MLV No.8 w/Pig Receiver	Choctaw, AL	110.8	Install mainline valve with receiver assembly within permanent right-of-way

Notes:
N/A – Not Applicable. This facility is located approximately 89.5 miles to the west of the proposed Project along the Gulf South proposed East Texas to Mississippi Expansion Project.
AL = Alabama
LA = Louisiana
MS = Mississippi

Specifically, Gulf South proposes to construct the mainline 18,940-horsepower (Hp) Harrisville Compressor Station in Simpson County, Mississippi, at MP 0.0, and two interconnect pressure management compressor stations: the 18,940-Hp Delhi Compressor Station in Richland Parish, Louisiana, at 89.5 miles west of MP 0.0, and the 7,100-Hp Destin Compressor Station in Clarke County, Mississippi, at MP 82.9. The Harrisville Compressor Station would be comprised of four Caterpillar 3616 reciprocating engines and be built 800 feet east of MP 0.0 at the point where the proposed Project starts at Gulf South's existing 30-inch-diameter Index 130 Pipeline. The Delhi Compressor Station would be comprised of four Caterpillar 3616 reciprocating engines and be built along pipeline facilities

associated with Gulf South's proposed East Texas to Mississippi Expansion Project. The Delhi Compressor Station would increase the pressure of the natural gas delivered from CenterPoint's Carthage to Perryville Pipeline up to the pressure of Gulf South's pipeline associated with its proposed East Texas to Mississippi Expansion Project. The Destin Compressor Station would be comprised of two Caterpillar 3616 reciprocating engines. This station would serve as a redundant station to maintain the pressure of the natural gas delivered from the proposed Project up to Destin's anticipated operating pressure of approximately 1,100 psig in the event of a loss of compression at the Harrisville Compressor Station.

At each compressor station site, the new compressor units and associated equipment would be housed in new buildings. Each new compressor station would also include an emergency generator to provide back-up electrical power. Gulf South would also construct an office/control building at each site. Additional facilities at sites would include filter-separators installed on the suction-side of the station to clean gas prior to compression, a fuel gas heater, and two station blowdown silencers. Other aboveground facilities would include pig launchers/receivers, MLV sites, and side valves. Most natural gas piping at the facilities would be installed below grade, and the perimeter of the compressor stations would be fenced. Portions of these sites may be paved, covered with gravel, or landscaped, depending on facility operations and maintenance requirements.

Metering and flow control for natural gas delivered to the proposed Project would be accomplished via M/R facilities as noted in Table 2.1-2. Similarly, facilities at the proposed M/R stations located at interconnects with CenterPoint, Southern Natural, Tennessee, Destin, and Transco pipelines would be used to meter the flow and adjust the pressure of natural gas delivered to those systems. Each M/R station would include a separate building for M/R equipment, flow/pressure control, and a customer facility housed within a fenced perimeter.

Gulf South would construct and operate the proposed eight MLVs below ground using 12-inch valve operation risers extending aboveground (for blowdowns and bypass) and connected on each side of the 42-inch valve with a crossover. These valves would enable portions of the pipeline to be shut down or isolated, if necessary. The MLVs would be installed in areas that are easily accessible to operating personnel and at intervals specified in U.S. Department of Transportation (DOT) safety standards for natural gas pipelines. These sites would typically be enclosed with security fencing and a lockable gate around the aboveground piping and valves.

One new side valve is proposed for construction at MP 72.4, near the intersection of the proposed 42-inch outside diameter (OD) pipeline and the existing Petal Gas Storage, LLC (Petal Gas) pipeline for a potential future connection with Petal Gas. A pig launcher is proposed at MP 0.2, and a pig receiver is proposed at MP 110.8.

Gulf South filed a supplement on March 5, 2007, to use internally-coated pipeline segments to accommodate potential capacity increases in the future, and this would not affect Gulf South's requested MAOP of 1,480 psig.

2.2 LAND REQUIREMENTS

The amount of land required for construction and operation of the proposed Project, including the proposed pipeline and associated facilities, the proposed aboveground facilities, and the requested extra work areas, are summarized in Table 2.2-1. Approximately 1,726.5 acres of land would be required for use during construction of the proposed Project. Approximately 857.6 acres of land would be required for use during operation of the proposed Project. Following construction, approximately 868.9 acres of land would be restored to its preconstruction condition or allowed to revert to its former use.

TABLE 2.2-1
Land Requirements by County
for the Proposed Southeast Expansion Project

Facility	Location County or Parish, State	Land Affected during Construction (acres)	Land Affected during Operation (acres)
Pipeline Facilities (42-inch diameter)[a]	Simpson County, MS	330.2	193.0
	Smith County, MS	227.4	137.0
	Jasper County, MS	289.9	171.2
	Clarke County, MS	319.7	187.5
	Choctaw County, AL	73.1	42.7
	Subtotal	**1,240.3**	**731.4**
Aboveground Facilities			
Delhi Compressor Station	Richland Parish, LA	69.5	69.5
Harrisville Compressor Station	Simpson County, MS	16.2	16.2
Destin Compressor Station	Clarke County, MS	34.4	23.3
CenterPoint M/R Station	Richland Parish, LA	0	0
Southern Natural M/R Station	Smith County, MS	3.5	0.9
Tennessee M/R Station	Jasper County, MS	3.2	0.8
Destin M/R Station	Clarke County, MS	0	0
Transco M/R Station	Choctaw County, AL	13.9	8.0
Mainline Valves	Various	5.5	0.5
	Subtotal	**146.2**	**119. 2**
Other Work Areas			
Extra Workspaces	Various	240.7	0
Pipe Storage Yards and Contractor Yards	Various	41.0	0
Access Roads	Various	58.3	7.0
	Subtotal	**340.0**	**7.0**
	Total	**1,726.5**	**857.6**

_____
Notes:
AL = Alabama
LA = Louisiana
MS = Mississippi
a Construction impacts are based on a 100-foot right-of-way in uplands and a 75-foot right-of-way in wetlands. Operation impacts are based on a 60-foot right-of-way. However, we are recommending that Gulf South's permanent right-of-way be limited to a width of 50 feet and that it overlap its construction right-of-way onto existing parallel pipeline rights-of-way.

2.2.1 Pipeline Facilities

Gulf South proposes to use a nominal 100-foot-wide construction right-of-way in upland areas to install the proposed pipeline. In wetland areas, Gulf South proposes to use a 75-foot-wide construction right-of-way to install the proposed pipeline. These construction right-of-way widths would consist of a 60-foot-wide permanent right-of-way and an additional 40- and 15-foot-wide temporary construction work area in upland and wetland work areas, respectively. The construction right-of-way may also be expanded by an additional 50 to 100 feet to account for site-specific conditions and alternative construction methods. The typical proposed pipeline construction right-of-way requirements in upland and wetland areas are illustrated in Figures 2.2.1-1 (typical right-of-way parallel to existing pipelines) and 2.2.1-2 (typical right-of-way in wetlands). Construction of the proposed pipeline through uplands and wetlands would require the temporary use of approximately 1,240.3 acres (see Table 2.2-1).

Following installation of the proposed pipeline and restoration of the construction right-of-way, Gulf South would permanently maintain a 60-foot-wide right-of-way located above the installed pipeline. Maintenance of this permanent right-of-way would require the use of approximately 731.4 acres.

Right-of-Way Considerations

We have received comments from ADEM, ADCNR, COE, FWS, MDWFP, MNHP, and the Mississippi Secretary of State expressing concern over multiple rights-of-way being added to greenfield existing rights-of-way, leading to accumulation of land impacts. Gulf South proposing a permanent right-of-way width of 60 feet. Additionally, we received comments from property owners concerning the need to minimize permanent right-of-way, particularly when multiple rights-of-way may occur within a common corridor. Based on our experience and review of similar projects, our understanding of pipeline operations, maintenance procedures, and equipment requirements, we believe that maintenance of a 60-foot-wide permanent right-of-way is not necessary for operation of the proposed pipeline. Therefore, in order to minimize permanent impacts associated with the operation of the proposed pipeline, **we recommend that:**

- **Gulf South should not exercise eminent domain authority granted under Section 7(h) of the NGA to acquire a permanent right-of-way greater than 50 feet in width.**

Limiting the permanent right-of-way to 50 feet in width would allow Gulf South to acquire through the condemnation process, if necessary, sufficient land to operate its proposed pipeline, and would minimize permanent impacts to adjacent resources and land uses. Although Gulf South's use of federal authority to condemn lands, should the proposed Project be certificated, would be limited to a permanent right-of-way 50 feet in width, Gulf South would be able to negotiate with a willing landowner for the use of additional lands for operation of the proposed Project.

In general, the installation of new pipeline on lands adjacent to existing, cleared rights-of-way (e.g., pipeline, power line, road, or railroad) is more environmentally preferable than on lands without adjacent existing cleared rights-of-way. Gulf South routed its pipeline to parallel a significant portion of its construction right-of-way with existing utility rights-of-way. Figures 2.2.1-1 and 2.2.1-2 indicate that Gulf South's construction right-of-way would abut the permanent right-of-way of Denbury Resources' pipeline for approximately 0.2 mile, the Crosstex Mississippi (Crosstex) pipeline for approximately 39.4 miles, and the Transco natural gas pipeline right-of-way for about 33.1 miles. In total, approximately 72.7 miles (i.e., approximately 65 percent) of the proposed pipeline would be collocated with existing utility corridors. Existing utility corridors that Gulf South's pipeline would parallel are listed in Table 2.2.1-2.

TABLE 2.2.1-2
Existing Rights-of-Way that are Parallel to the Proposed Southeast Expansion Project

MP Begin	MP End	Type of Right-of-Way	Easement Owner	Width of Existing Right-of-Way (feet)
30.3	30.5	Pipeline	Denbury	50
38.3	77.7	Pipeline	Crosstex	50
77.7	110.8	Pipeline	Transco	125

In the Draft EIS, we recommended that Gulf South use part of the Denbury, Crosstex and Transco pipelines' existing rights-of-way to maximize use of adjacent rights-of-way in Mississippi and Alabama. In its May 25, 2007, response, Gulf South indicated that, for safety and logistical reasons, it hesitates to overlap an existing pipeline's permanent right-of-way with its proposed construction right-of-way because the locations of Crosstex and Transco's pipelines within their rights-of-way are not consistent, and the distances from the pipelines to the edges of the permanent rights-of-way are not documented. Gulf South stated in response to the Draft EIS that it considers a 20-foot separation between existing pipelines to be a minimal safe distance.

Gulf South provided additional comments and clarification on July 6, 2007, regarding different issues pertinent to the Crosstex and Transco parallel rights-of-way. It indicated that Crosstex's permanent right-of-way is defined as 33 feet in width, with vegetation clearing occurring for 30 to 35 feet. Gulf South understands the location of this pipeline can vary from 15 to 5 feet to the edge of Crosstex's permanent right-of-way. Additionally, Gulf South indicated that it designed workspace to abut Crosstex's pipeline right-of-way knowing that recorded easement instruments specify Crosstex's centerline as being 10 feet from the edge of Crosstex's permanent right-of-way. In addition to being reluctant to encroach to within 10 feet of Crosstex's pipeline, Gulf South cited other uncertainties pertaining to safety, such as unknown depth of cover, unknown record of maintenance or pipeline integrity, and unknown and uncontrolled operating pressures. Finally, Gulf South expressed concern over already negotiated easements.

Regarding Transco's pipeline locations, Gulf South stated it designed its construction right-of-way to be 25 feet from Transco's closest pipeline and repeated its desire to avoid overlap. Gulf South stated it would continue working with Transco.

Transco stated in the Draft EIS scoping meeting held in Butler, Alabama, on May 10, 2007, that it had 144 easements in the area where Gulf South's proposed pipeline would parallel Transco, and that 89 of these were open and undefined easements. In its July 6 letter, Gulf South indicated that it would be able to overlap its right-of-way easements on any undefined easements according to the location specified in the FERC's certificate, if approved.

While Gulf South's concern over a critical separation of construction workspace and the Crosstex pipeline as it applies in locations where that separation may be 10 feet or less may be valid, we believe that there is no essential conflict with storing spoil over or adjacent to Crosstex's or Transco's existing pipelines wherever its separation is greater than 10 feet. Given that procedures are available to Gulf South to locate existing pipelines, such as contacting the appropriate state One-Call system, we believe Gulf South would be able to safely install the proposed pipeline if a minimum verifiable distance is maintained.

In addition to being feasible, efficient use of existing available workspace would reduce environmental impacts. This recommendation is consistent with the Commission's obligation to consult with other agencies and landowners to reduce overall environmental impacts. While we understand that Gulf South has negotiated easements early, they have done so at their own risk.

Gulf South has not yet provided site-specific information for its construction rights-of-way that clearly demonstrates where along Crosstex's and Transco's rights-of-way it believes our recommended 10-foot-overlap would pose problems, as described in its May 25 and July 6 filings. Therefore, we recommend that:

- **Prior to construction, Gulf South file with the Secretary for review and written approval by the Director of OEP:**

  a. **revised alignment sheets and cross-section diagrams showing the use of at least 10 feet of Transco's and Crosstex's maintained permanent rights-of-way, for at least spoil storage, as part of its 100-foot-wide construction right-of-way; and**

  b. **site-specific justification by milepost for areas where Gulf South believes use of the existing maintained permanent right-of-way to be infeasible for spoil storage.**

Some segments of the proposed pipeline (major waterbody, road, and/or railway crossings) would be installed using horizontal directional drill (HDD) or bored crossings (see Section 2.3.2). Generally, these segments would only require the use of the permanent 60-foot-wide right-of-way; however, additional temporary workspaces (ATWS) would most likely be required because of the need for additional space to accommodate these construction techniques.

In the Draft EIS, we recommended that Gulf South should file with the Secretary additional site-specific justification for the size of its proposed ATWS needed for two-tone construction. In its comments on the Draft EIS, Gulf South stated that they have revised the sizes of its proposed ATWS needed for two-tone construction to reflect widths of 50 feet instead of the previously indicated widths of 70 feet. Gulf South believes that a 50-foot width is the minimum needed to provide for safe cut spoil storage in areas with steep side slopes and is consistent with the general side slope workspace requirements on Gulf South's other projects. We concur with this evaluation. See revised Figure 2.3.2.5-1 showing Gulf South's revised side slope construction limits.

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ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED SOUTHEAST EXPANSIONPROJECT
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Page 2-9
Figure 2.2.1-1
Typical Right-of-Way in Uplands

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ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED SOUTHEAST EXPANSIONPROJECT
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Figure 2.2.1-2
Typical Right-of-Way in Wetlands

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2.2.2 Aboveground Facilities

In addition to land already required for use during construction of the proposed pipeline, construction of the proposed aboveground facilities would require the use of 146.2 acres for construction and 119.2 acres for operation, respectively (Table 2.2-1). The proposed aboveground facilities include three compressor stations, five M/R stations, eight mainline valves, one side valve, and two pig launcher/ receiver facilities (each of which are associated with MLVs).

Construction of the Delhi, Harrisville, and Destin Compressor Stations would encumber 69.5, 16.2, and 34.4 acres of land, respectively. Operation of the Delhi, Harrisville, and Destin Compressor Stations would encumber 69.5, 16.2, and 23.3 acres of land, respectively. The land within the fenced perimeter of the compressor station facilities would be occupied by buildings, piping, and other equipment. Portions of these sites may be paved, covered with gravel, or landscaped, depending on facility operations and maintenance requirements. Construction and operation land requirements of the CenterPoint, Southern Natural, Tennessee, Destin, and Transco M/R stations would be 0, 3.5, 3.2, 0, and 13.9 acres, respectively. Operations will require 0, 0.9, 0.8, 0, and 8 acres, respectively. At the CenterPoint and Destin M/R stations, no additional land requirements are needed because construction and operation of both stations will be within the Delhi and Destin Compressor stations, respectively, and their land use impacts are included in the compressor stations' land values.

The MLV sites would typically consist of a 50-foot by 50-foot fenced area installed within the confines of the permanent pipeline right-of-way. Construction and operation of all but two of the MLVs would not result in land requirements beyond those already noted for the permanent pipeline right-of-way. MLVs 1 and 8 would require additional permanent land requirements beyond those noted for the facility for operation.

2.2.3 Other Work Areas

In addition to the proposed land requirements associated with the aforementioned pipeline and aboveground facilities, land would also be required during construction and operation of the proposed Project for ATWSs, pipe storage and contractor yards, and access roads. These requirements are described below. Should these requirements change prior to or during construction, Gulf South would be required to file a variance request with the Secretary for review and approval prior to using or impacting new areas.

2.2.3.1 Additional Temporary Work Space

ATWSs would be required for construction at road crossings, railroad crossings, crossings of existing pipelines and utilities, stringing truck turnaround areas, wetland crossings, HDD entrance and exit pits, and open-cut waterbody crossings. These ATWSs would be located adjacent to the pipeline construction right-of-way and could be used for such things as spoil storage, staging, equipment movement, material stockpiles, and pull string assembly associated with HDD installation. Construction of the proposed Project would require 756 ATWSs, totaling 240.7 acres ranging in size from less than 0.1 acre to 6.0 acres. ATWSs would be returned to their preconstruction condition and former usage following completion of construction activities. Additional information on ATWS areas is provided in Section 3.8.

2.2.3.2 Pipe Storage and Contractor Yards

Gulf South has proposed the use of three off-site pipe storage and contractor yards, each serving one of the three construction spreads (see Section 2.3.1). These facilities would consist of

warehouses or open lots located in areas of existing commercial or industrial use. The pipe storage and contractor yard serving spread one occupies approximately 15 acres and is located 1.5 miles southwest of the Community of Terry in Hinds County, Mississippi. The pipe storage and contractor yard serving spread two occupies approximately 20 acres and is located west of the Community of Laurel within the Hesler-Nobel Airport complex in Jones County, Mississippi. The pipe storage and contractor yard serving spread three occupies approximately 6 acres and is located 0.3 mile southwest of the intersection of Interstate Highway 20 and State Highway 19 in Lauderdale County, Mississippi. Total land requirements for these facilities would be approximately 41.0 acres. The locations of the proposed pipe storage and contractor yards are identified on the facility location maps included as Appendix B-2 of this Final EIS. Gulf South proposed the use of the three new pipe pipe storage and contractor yards in their May 29, 2007, filing. The seven pipe storage and contractor yards mentioned in the Draft EIS would not be utilized. All pipe storage and contractor yards would be leased from willing landowners, and upon completion of construction activities would be returned to their preconstruction condition and former usage.

2.2.3.3 Access Roads

Gulf South would use existing public and private roads to the extent possible to facilitate equipment and material access along the proposed Project route. Gulf South has indicated that construction of the proposed pipeline and aboveground facilities would require the temporary use of 138 existing access roads of varying lengths and construction. Gulf South reports that 47 of the 138 access roads would require upgrades to support construction-related traffic. Upgrades that could be required include grading, placement of gravel for stability, replacing or installing culverts, and clearing of overhead vegetation. Minor widening could also be required at sharp turns to facilitate passage by pipe trucks. Gulf South has not completed the detailed design plans for these access roads, but reports that improvement of existing access roads could require widening to as much as 15 feet in some locations.

Gulf South estimated that construction of new access roads and modification of existing access roads would affect approximately 58.3 acres. Following construction, three access roads would be maintained and used to provide long-term access to aboveground facilities, affecting approximately 7.0 acres. The remainder of the lands affected by disturbance at new or upgraded access roads would revert to preconstruction uses following construction.

All new access roads would be routed through previously cleared or disturbed areas to the extent practicable. Additional information on access roads is provided in Section 3.8.

2.3 CONSTRUCTION PROCEDURES

The proposed pipeline facilities would be designed, constructed, operated, and maintained in accordance with the DOT regulations under 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; and other applicable federal and state regulations. Among other design standards, these regulations specify pipeline material selection; minimum design requirements; protection from internal, external, and atmospheric corrosion; and qualification procedures for welders and operations personnel. More detailed safety information is provided in Section 3.12. In addition, Gulf South would comply with the siting and maintenance requirements in 18 CFR 380.15 and other applicable federal and state regulations.

Upland construction of the proposed pipeline would be conducted using conventional open-cut methods as described below. The construction of the proposed pipeline through waterbodies and wetlands, as well as other specialized construction procedures, is described in Section 2.3.2.

2.3.1 General Pipeline Construction Procedures

Conventional open-cut pipeline construction has been characterized as a moving assembly line with a construction spread (crew and equipment) proceeding along the construction right-of-way in a continuous operation, as depicted in Figure 2.3.1-1. Gulf South proposes to use three individual construction spreads to complete installation of the proposed pipeline.

Right-of-Way Survey and Fence Crossings

After right-of-way easements have been obtained, the pipeline centerline, construction right-of-way, and ATWSs would be surveyed and staked. Gulf South would contact the appropriate state One-Call system so that existing underground utilities could be located, identified, and flagged to prevent accidental damage during pipeline construction. Other sensitive resources, such as wetland boundaries, cultural resources, and any areas of protected species habitat, would also be marked.

Where fences are encountered along the construction right-of-way, a fence crew would install temporary fences to confine livestock to existing areas off the right-of-way and to prohibit or otherwise control public access across the right-of-way. This work would include installing new posts to brace the areas on either side of the proposed cut to avoid damage to the existing fence or wall. Temporary gates would be installed as necessary.

Clearing and Grading

The construction right-of-way and ATWSs would be cleared and graded, where necessary, to provide a relatively level surface for trench-excavating equipment and the movement of other construction equipment. Brush, trees, roots, and other obstructions, such as large rocks, would be cleared from all construction work areas. Where appropriate, stumps would be cut flush with the ground and left in place. Gulf South indicates that marketable timber could be cut and stacked at the edge of the right-of-way for landowner use or recovery of timber value. Tree stumps would be removed from within the permanent right-of-way. Cleared woody debris would be burned (in accordance with state and local burning requirements), chipped (except in wetlands), or distributed over the disturbed area as mulch or transported off-site to an appropriate disposal facility. As necessary, topsoil would be stripped and segregated in residential areas, actively cultivated or rotated croplands, pastures, hayfields, and other areas where requested by a land management agency or landowner as depicted in Figure 2.3.1-2. Topsoil would be removed to its actual depth, up to a maximum depth of 12 inches, and stockpiled separately from the subsoil excavated from the pipeline trench. Typically, topsoil would be stripped from directly over the pipeline ditch and the adjacent subsoil spoil storage area (i.e., ditch plus spoil method), but landowners would be provided with the option of topsoil segregation across the full construction work area. Additional information on topsoil segregation is provided in Section 3.2.

To contain disturbed soils during clearing and grading in upland areas and to minimize erosion and sedimentation of wetlands and waterbodies, temporary erosion controls would be installed immediately after initial disturbance of soils and would be maintained throughout construction.

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Figure 2.3.1-1
Typical Pipeline Construction Sequence

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Figure 2.3.1-2
Typical Right-Of-Way in Agriculture

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Trenching

Before beginning excavation, Gulf South would contact the appropriate state One-Call system so that existing underground utilities could be located, identified, and flagged. A trench then would be excavated using a trenching machine or backhoe-type equipment. Excavated materials would typically be stored on the non-working side of the trench (Figure 2.2.1-1).

Temporary trench plugs (or barriers) would be used to create segments within the open trench to reduce erosion and allow access across the trench. Trench plugs typically would consist of either compacted subsoil or sandbags placed across the ditch (soft plugs) or short, unexcavated portions of trench (hard plugs). Trench dewatering also may be required along portions of the route.

The trench would be excavated to a depth that would allow space for the pipeline, pipeline bedding, and the minimum amount of top cover required by DOT specifications. The trench typically would be excavated to a depth of 7 feet to enable the proposed pipeline to be installed at a minimum depth of 3 feet (measured from the top of the pipeline) below the ground surface. The depth of the pipeline would vary and would range from these minimum depth requirements to that depth required for safe crossing of a feature such as a road, highway, railroad, or waterbody. At crossings of utilities or foreign pipelines, the proposed pipeline would also generally be installed at a greater depth to provide for a minimum clearance of 12 inches, or the depth that may be required by state or local regulations, whichever provides greater protection.

Areas of bedrock that might be encountered along the proposed Project route should be easily workable with standard construction equipment and techniques, and Gulf South does not anticipate the need for blasting associated with trench excavation

Pipe Stringing, Bending, and Welding

Sections of pipe up to 80 feet long would be delivered to the job site and temporarily placed or "strung" along the excavated pipeline trench where they would be bent as necessary to follow the natural grade and direction changes of the right-of-way. Following stringing and bending, the ends of the pipeline would be carefully aligned and welded together. The welds would be visually and radiographically (i.e., x-ray) inspected to ensure structural integrity. Those welds that do not meet established specifications would be repaired or replaced.

An external coating would cover and protect the delivered pipeline sections. Following welding, the previously uncoated ends of the pipe at all joints would be coated with material compatible with a factory-applied coating, as applicable, in preparation for installation. The coating on the remainder of the completed pipe section would be inspected for defects, and repairs would be made to any damaged areas prior to lowering the pipe into the trench. At some locations, it may be necessary to provide negative buoyancy in the form of concrete weights, a concrete coating, pipe sacks, and/or soil anchors. In addition, Gulf South has indicated that the pipeline would be internally coated.

Lowering-in and Backfilling

Prior to lowering the pipeline, the trench would be cleaned of debris and foreign material and would be dewatered as necessary. Trench dewatering, which would entail pumping accumulated groundwater or rainwater from the trench to stable upland areas, would be performed in accordance with applicable local, state, and federal permitting requirements. In areas of rock, the bottom of the trench may be padded with sand, gravel, screened soils, sandbags, or support pillows to protect the pipe coating. However, topsoil would not be used as padding material. The pipeline then would be lowered into the

trench by appropriately spaced sideboom tractors working in unison to avoid buckling of the pipe. Trench breakers would be installed at regular intervals where appropriate to prevent subsurface erosion and flow of water between the trench and crossed waterbodies, wetlands, and near-surface groundwater.

After the pipeline is lowered into the trench and adequately protected, previously excavated materials would be used to backfill the trench. Any excess excavated materials or materials deemed unsuitable for backfill would be evenly spread over the right-of-way or disposed of in accordance with applicable regulations and landowner requirements. Backfilling over the trenchline would occur to approximately 6 inches above the original elevation to accommodate future soil settlement.

Hydrostatic Testing

Once installation and backfilling are completed and before the proposed Project begins operation, the pipeline would be hydrostatically pressure-tested in accordance with DOT safety standards (49 CFR Part 192) to verify its integrity and to ensure its ability to withstand the MAOP. Hydrostatic testing consists of installing a hydrostatic test cap and manifold, filling the pipeline with water, pressurizing the pipeline to its MAOP, and maintaining that test pressure for a specified period of time. Any leaks detected during the test would be repaired and the pipeline would be re-tested.

Water used for hydrostatic testing would be obtained from surface water sources and municipal supplies, and no biocides or other hydrostatic test water additives would be added to the test water. After hydrostatic testing is completed, the test water either would be pumped to the next segment of pipeline to be tested or would be discharged. Additional information on hydrostatic testing is provided in Section 3.3.

Once a segment of pipe has been successfully tested, it would be cleaned and dried using mechanical tools (pigs) moved through the pipeline with pressurized, dry air. The hydrostatic test cap and manifold then would be removed and the pipe would be connected to the remainder of the pipeline using the welding and inspection procedures describe above.

Cleanup and Restoration

Within 20 days (or as soon as possible) of completing the backfilling of the trench, all remaining trash, debris, surplus materials, and temporary structures would be removed from the right-of-way and disposed of in accordance with applicable federal, state, and local regulations. All disturbed areas would be finish-graded and restored as closely as possible to preconstruction contours. Permanent erosion control measures also would be installed. Topsoil previously segregated from the subsoil material in all agricultural and residential areas would be spread uniformly across the construction right-of-way, and the topsoil and subsoil in these areas would be tested for compaction along the disturbed corridor.

Vegetation restoration would begin within six days of final grading. After the soil is readied for planting or seeding in areas where Gulf South and landowners have negotiated agreements, Gulf South would reseed or replant according to those agreements. To provide permanent erosion control along the right-of-way, all other upland areas disturbed by construction would be fertilized, limed, and seeded in accordance with the prescribed dates and seed mixes specified by the local soil conservation authorities or land management agencies. Wetland areas would not be fertilized, limed, or mulched unless Gulf South is directed to do so by state or local regulatory agencies.

Disturbed pavement and other road surfaces along access roads would be restored to preconstruction or better conditions, unless otherwise specified by the property owner and approved by applicable regulatory agencies. Likewise, any private or public property damaged during construction,

such as fences, gates, and driveways, would also be restored to original or better condition consistent with individual landowner agreements.

Pipeline markers and/or warning signs would be installed along the pipeline centerline at specified intervals to identify the pipeline location, specify Gulf South as the operator of the pipeline, and provide telephone numbers for emergencies and inquiries.

Minimization Measures

To minimize construction-related effects, Gulf South proposes to implement its *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and its *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) as described in Section 3.4. With the exception of a few alternative measures listed in Table 3.4.2.2-1, Gulf South's proposed Plan and Procedures are consistent with our guidance documents of the same name. The FERC Plan and Procedures are available for review on the FERC Internet website at www.ferc.gov/industries/gas/enviro/guidelines. The intent of Gulf South's Plan is to outline baseline mitigation measures that minimize erosion and enhance revegetation in upland areas. The major components of this Plan are described in Section 3.2. The intent of Gulf South's Procedures is to outline baseline mitigation measures that minimize the extent and duration of construction-related disturbances to wetlands and waterbodies. The major components of these Procedures are described in Sections 3.3 and 3.4.

Gulf South has also developed several Project-specific plans to avoid or minimize environmental impacts during construction. Gulf South has prepared a general Spill Prevention, Containment, and Control (SPCC) plan, which describes the management of hazardous materials, such as fuels, lubricants, and coolants that would be used during construction. Site-specific plans would be developed for each construction spread once the construction contractors have been selected. Gulf South developed a *Plan for the Unanticipated Discovery of Contaminated Environmental Media* that would be used in the event contaminated soils are identified during construction activities. Gulf South has also developed a *Plan for the Containment of Inadvertent Release of Drilling Mud During Horizontal Directional Drilled Wetland and Waterbody Crossings* (HDD plan) that describes the procedures that would be implemented to monitor for, contain, and clean up any inadvertent releases of drilling fluid during HDD operations. The HDD plan also includes the directional drilling contingency plan (DDC plan). Additionally, Gulf South has developed a *Plan for the Unanticipated Discovery of Historic Properties, Human Remains or Potential Paleontological Evidence During Construction* that would guide the treatment of any unanticipated discoveries of cultural resources or human remains during construction (see Section 3.10). Gulf South is also developing a Stormwater Pollution Prevention Plan (SWPPP), but this plan is not yet complete. These plans can be viewed on the internet using our eLibrary, which is found at www.ferc.gov.

2.3.2 Specialized Pipeline Construction Procedures

2.3.2.1 Waterbody Crossings

A total of 308 waterbodies would be crossed by the proposed Project. Gulf South proposes to use either open-cut or HDD techniques for all of these crossings as described below. Construction of the proposed pipeline across these waterbodies would be accomplished in accordance with Gulf South's Procedures and all applicable permits.

Open-cut Crossing

An open-cut waterbody crossing would be conducted using methods similar to conventional open-cut trenching. The open-cut construction method would involve excavation of the pipeline trench across the waterbody, installation of a prefabricated segment of pipeline, and backfilling of the trench with native material. Excavation and backfilling of the trench would be accomplished using backhoes or other excavation equipment operating from one or both banks of the waterbody. The use of equipment operating in the waterbody would be limited to that needed for construction of the crossing. All other construction equipment would cross the waterbody using equipment bridges.

During construction, Gulf South would implement mitigation measures to minimize impacts to the aquatic environment, as described in its Procedures. Construction would be scheduled so that the trench would be excavated immediately prior to pipelaying activities. The duration of construction across minor waterbodies would be limited to 24 hours for minor waterbodies (10 feet wide or less) and 48 hours for intermediate waterbodies (greater than 10 feet wide but less than or equal to 100 feet in width). In accordance with its Procedures, excavated spoil would be stockpiled in the construction right-of-way at least 10 feet from the stream bank or in approved additional work areas, and would be surrounded by sediment control devices to prevent sediment from returning to the waterbody. The waterbody banks would be returned to as near preconstruction conditions as possible within 24 hours of completing all open-cut crossings.

Horizontal Directional Drill

The HDD method is a trenchless crossing method that may be used to avoid direct impacts to sensitive resources such as waterbodies, wetlands, and infrastructure (e.g., roads, railways, etc.) by directionally drilling beneath them. HDD installation on the proposed Project would result in a pipeline that is installed beneath the ground surface by pulling the pipeline through a pre-drilled bore hole. HDD installation is typically carried out in three stages: (1) directional drilling of a small-diameter pilot hole; (2) enlarging the pilot hole to a sufficient diameter to accommodate the pipeline; and (3) pulling the prefabricated pipeline, or pull string, into the enlarged bore hole. Figure 2.3.2-1 illustrates a typical HDD installation process.

The pilot hole (i.e., approximately 12 inches in diameter depending on drill head and soil characteristics) would be drilled along a predetermined HDD bore. The drill head for the pilot hole would have a down-hole, hydraulic, motor-powered drill bit attached to the drill string (pipe connecting the drill rig to the drill head). The hydraulic motor would convert hydraulic energy from drilling fluid, or drilling mud, pumped from the surface to mechanical energy at the drill head, allowing for bit rotation without drill string rotation. Drill string would be added as the pilot hole progressed.

Gulf South proposes to use hand-laid electric-grid guide wires to assist guidance of the drill bit along the proposed route. A small pathway approximately 2 to 3 feet wide may be cut using hand tools in heavily vegetated areas such as wetlands in order to position these guide wires, resulting in minimal ground disturbance. No large trees would be cut as part of this process. The path of the drill head would be controlled using an electromagnetic steering tool positioned on the tip of the drill bit and would follow the electromagnetic field created by the guide wires. Additionally, drill bit positioning sensors may help guide the path of the drill.

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Figure 2.3.2-1
Typical HDD Installation Process

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After completion of the pilot hole, the HDD bore would be progressively reamed to a diameter about 12 inches larger than the pipeline diameter. Drilling fluid would be pumped through the reaming tools to aid in cutting, support the bore hole, transport spoil back to the surface, and lubricate the trailing pipe. Upon completion of drilling and reaming, the drill string would extend from the entrance pit to the exit pit. Concurrent with reaming the bore, the pull string to be inserted in the HDD bore would be fabricated and laid out within the construction right-of-way or ATWS extending from the HDD exit pit. The pull string would be connected to the drill string and pulled back through the bore. The pipeline would be neutrally buoyant in the drilling fluid, allowing it to be pulled through the HDD bore hole.

Drilling fluid circulated through the bore during the pilot hole drilling and reaming process would be collected at the surface and processed to remove spoils, allowing the fluid to be reused. Excess spoils and drilling fluid would be treated for disposal and disposed of at an approved location in accordance with regulatory requirements, agreements, and permit conditions. The proposed HDD drilling fluid would consist of water and bentonite. Bentonite is a mixture of non-toxic clays and rock particles consisting of about 85 percent montmorillonite clay, 10 percent quartz and feldspars, and 5 percent accessory materials, such as calcite and gypsum.

A successful HDD would result in little or no impact to the waterbody being crossed. The HDD method is not without risk, however, as inadvertent drilling fluid releases could result if the fluid escapes containment at pits that would be excavated at the HDD entrance and exit points or if a "frac-out" occurs. A frac-out occurs when drilling fluids escape the drill bore hole and are forced through the subsurface substrate to the ground surface. Frac-outs occur most often in highly permeable soils during the entrance and exit phases of the pilot hole drill, as this is when the greatest pressures are exerted on the bore walls in shallow soils. Drilling fluid pressures in the bore hole and drilling fluid pumping and return flow rates would be monitored to detect the potential occurrence of a frac-out. If survey and monitoring procedures indicate that a frac-out may have occurred, Gulf South would implement the corrective measures identified in its HDD Plan. If a frac-out does occur, Gulf South would immediately notify public agencies specified in its HDD Plan to determine a course of action, whether it be modification of drilling fluid parameters or complete suspension of drilling operations. These corrective measures would be affected to minimize or prevent further releases. Any surfaced (land) drilling fluids would be contained, clean-up procedures would commence, and the appropriate agencies would be notified. A discussion of the potential impacts of HDD on waterbodies and wetlands is provided in Sections 3.3 and 3.4.

In the event that Gulf South's attempted HDD fails, Gulf South would use its contingency procedures outlined in its HDD Plan for filling abandoned holes, relocating a new drill hole, reattempting the new HDD, or adopting an alternative crossing method. Gulf South would consult with appropriate regulatory agencies and submit the selection of any alternative crossing method to the FERC.

Gulf South proposes to use 14 separate HDD crossings to accomplish pipeline installation across 29 waterbodies, including five major waterbodies (greater than 100 feet in width), and two Nationwide Rivers Inventory (NRI) listed streams, the Strong River and the Chickasawhay River (Table 2.3.2.1-1). Section 3.3 and Appendix D identify and describe the waterbodies that would be crossed using HDD techniques. In addition to waterbodies, Gulf South proposes to cross 16 wetlands and five roadways via HDD methods.

TABLE 2.3.2.1-1
Proposed Horizontal Directional Drill Locations for the Proposed Southeast Expansion Project

Drill Location	Milepost		Length (feet)
	Begin	End	
U.S. Hwy. 49 and Dabbs Creek	12.3	12.8	2,400
Campbell's Creek/Campbell's Road	15.9	16.2	1,600
Strong River and Highway 13	17.9	18.4	2,525
Oakohay Creek/Beaver Creek	34.1	34.7	3,500
Leaf River	44.0	44.3	1,600
West Tallahala River	45.2	45.5	1,600
Tallahoma Creek	55.8	56.2	2,200
Tallahala Creek	62.4	62.7	1,600
Interstate 59 and County Road 8	69.3	69.7	1,800
Shubuta Creek	82.5	82.8	1,600
Chickasawhay River	89.0	89.5	2,300
County Road 613	94.7	95.1	2,100
Bucatunna Creek	100.3	100.6	1,600
Okatuppa Creek	107.2	107.5	1,600

2.3.2.2 Wetland Crossings

Construction of the proposed Project pipeline across wetlands would be conducted in accordance with applicable permits and Gulf South's Procedures. Overall, the wetland crossing methods and mitigation measures identified in its Procedures are designed to minimize the extent and duration of construction-related disturbance within wetlands. Construction methods in wetlands would consist of the conventional lay method, push-float method, or HDD. Other than planned HDDs, the site-specific crossing procedures used to install the pipeline across wetlands would be determined based on conditions at the time of construction and would vary dependent on the level of soil stability and saturation encountered during construction.

The construction right-of-way width through wetland areas would be reduced to 75 feet. Within the right-of-way, woody vegetation would be removed or cut off at ground level and would be removed from the wetlands, leaving the root systems intact. Pulling of tree stumps and grading activities would be limited to that area directly over the trenchline, unless it was determined that safety-related construction constraints required grading or removal of tree stumps from under the working side of the construction right-of-way. Temporary erosion control devices would be installed as necessary immediately after initial disturbance of wetlands or adjacent upland areas to prevent sediment flow into wetlands, and would be maintained until revegetation is complete. Trench plugs would be installed as necessary to maintain wetland hydrology.

The construction equipment operating in wetland areas would be limited to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way. If standing water or saturated soil conditions were present, or if construction equipment caused ruts or mixing of the topsoil and subsoil, construction equipment operating in wetland areas would be further limited to the use of low-ground-pressure equipment or normal equipment operating from timber riprap or prefabricated equipment mats.

Topsoil would be stripped from the area directly over the trench line to a maximum depth of 12 inches in unsaturated soils and would be stockpiled separately from the subsoil where practicable. The segregated topsoil would be restored to its original location immediately following installation of the pipe and backfill of the trench. Materials such as timber mats placed in wetlands during construction would be removed during final cleanup, and the preconstruction contours of the wetland would be restored. Any required permanent erosion control measures would then be installed, and disturbed areas within the wetland would be temporarily stabilized with appropriate vegetation to protect the wetland soils from erosion.

The wetlands that would be affected by construction of the proposed Project are described in Section 3.4. That section also provides further discussion of the wetland restoration and mitigation procedures that would be implemented by Gulf South.

2.3.2.3 Road, Highway, and Railroad Crossings

The proposed pipeline would cross numerous paved and unpaved roads, highways, and railroads along the proposed Project route. Construction across these features would be accomplished in accordance with Gulf South's Plan and the requirements of all applicable crossing permits and approvals. During roadway construction, Gulf South would incorporate any safety precautions required by state and local transportation agencies.

All railroads and approximately 91 major highways and paved roads would be crossed using HDD or subsurface boring techniques. The HDD crossing method, as described in detail in Section 2.3.2.1, would be used at Interstates 49 and 59, Mississippi Highway 13, and County Roads 8 and 613. Bores beneath roads and railways would entail excavating pits on both sides of the feature and boring a horizontal hole equal to the diameter of the pipe (or casing, if required) at the depth of the pipeline installation. The pipeline section and/or casing then would be pushed through the bore. If additional pipeline sections were required, they would be welded to the first section of the pipeline in the bore pit before being pushed through the bore. There would likely be little disruption of traffic on roads and railways that are bored. Section 3.8 provides additional information on the proposed major road crossing locations.

Pipeline crossings of lightly traveled and unimproved rural dirt roads typically would be crossed via open-cut installation. Such crossings would require the temporary closure of these roads and implementation of detours where feasible. In the absence of a reasonable detour, construction across the roadway would be staged to allow at least one lane of traffic to remain open except for the limited periods required for installing the pipeline. Efforts would be made to schedule lane closures outside of peak traffic periods. Attempts would also be made to avoid peak-traffic periods on all road construction. All construction operations at these crossings, including repair and surface restoration, would typically be completed within one day.

2.3.2.4 Agricultural Areas

Agricultural areas along the proposed Project route include pasture areas used for livestock grazing, hayfields, fallow fields, and rotated croplands such as cotton and corn. In these areas, Gulf South would implement special procedures to minimize impacts on current agricultural uses. Unless the landowner or land management agency specifically approves otherwise, topsoil would be removed to its actual depth, up to a maximum of 12 inches, and would be stockpiled separately from the subsoil excavated from the pipeline trench. Typically, topsoil would be stripped from directly over the pipeline ditch and the adjacent subsoil spoil storage area, but landowners would be provided with the option of

topsoil segregation across the full width of the construction work area. During construction, the natural flow patterns of all fields would be maintained by providing breaks in topsoil and subsoil stockpiles.

During cleanup and restoration, all disturbed areas would be finish-graded and restored as closely as possible to preconstruction contours. Topsoil previously segregated from the trench material in all agricultural areas would be spread uniformly across the construction right-of-way, and any stones or excess rock would be removed from at least the top 12 inches of soil. The topsoil and subsoil in all agricultural and residential areas also would be tested for compaction at regular intervals using penetrometers or other appropriate devices to conduct tests. Any severely compacted areas would be plowed with a paraplow or other deep tillage device. In areas where the topsoil was segregated, the subsoil also would be plowed before replacing the segregated topsoil.

Gulf South stated that the proposed Project would not cross any known drainage structures or irrigation facilities. Gulf South's plans require working with property owners to identify locations of existing drainage structures and irrigation facilities that could be damaged during construction. Should any damage occur to these facilities, Gulf South would repair these systems with the input of the property owners. Gulf South also would work with landowners during easement negotiations to establish compensation agreements for crop damages and for loss of growing time, as applicable. Additional information on special procedures used in agricultural areas is presented in Sections 3.2 and 3.8.

2.3.2.5 Rugged Topography

The proposed Project would not involve construction in areas of excessively rugged topography, such as mountains or canyons. However, some portions of the proposed Project route would traverse areas of side slopes and rolling terrain that could require specialized "two-tone" construction techniques to provide for safe working conditions. Under the two-tone construction technique, the uphill side of the construction right-of-way would be cut during grading. The material removed from the cut would be used to fill the downhill side of the construction right-of-way to provide a safe and level surface from which to operate heavy equipment. The pipeline trench would then be excavated along the newly graded right-of-way. Figure 2.3.2.5-1 provides a typical cross-section of the two-tone construction technique. The areas along the proposed Project that likely would be affected by two-tone construction techniques are listed in Table 2.3.2.5-1.

TABLE 2.3.2.5-1
Areas That Would Be Affected by Two-Tone Construction Techniques for the Proposed Southeast Expansion Project

Milepost	Length Affected (feet)	Additional Workspace Requirement
0.0-0.9	1,565	45 to 50-foot-wide ATWS
3.2-3.5	2,730	50-foot wide ATWS
3.9-4.6	3,370	45-foot-wide ATWS
6.2-6.8	2,583	45-foot-wide ATWS
8.7-8.9	1,470	50-foot-wide ATWS
20.3-22.9	6,685	45 to 50-foot-wide ATWS
29.5-29.7	1,010	50-foot-wide ATWS
75.5	970	50-foot-wide ATWS
77.1-78.5	4,180	50-foot-wide ATWS
90.9-93.8	6,645	50-foot wide ATWS
95.7-96.9	4,540	50-foot wide ATWS
98.1-99.8	4,360	50-foot wide ATWS
100.9	420	50-foot wide ATWS
102.2-102.6	2,085	50-foot wide ATWS
103.4-107.1	11,380	50-foot wide ATWS
108.2-110.6	6,995	50-foot wide ATWS
Total	**60,988**	

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Figure 2.3.2.5-1
Typical Side Slope Workspace Construction Area

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The two-tone construction technique would likely require ATWSs to accommodate the additional volumes of fill material generated by this technique (see Section 3.8). Following our recommendation in the Draft FEIS for Gulf South to reduce the sizes of ATWSs originally proposed for two-tone construction, Gulf South filed information to our staff that it would limit the size of ATWSs to 50 feet, where they originally proposed 70 feet. Following pipeline installation and backfill of the trench, excavated material would be placed back in the cut and compacted to restore the approximate original contours. All disturbed areas would then be stabilized in accordance with Gulf South's Plan.

2.3.2.6 Residential Areas

Gulf South proposes to complete construction activities near residences as quickly as possible to minimize construction-related disturbances. Open access to residences would be maintained to the extent possible, and coordination with landowners would be conducted to minimize inconvenience regarding possible temporary loss of utility service or to address special landscaping issues. Safety fencing would also be used to prevent pedestrian access to the construction site. Gulf South has developed construction measures for all residences within 50 feet of the construction ROW, and site-specific construction plans for residences located within 25 feet of the construction right-of-way.

Additionally, a site-specific plan for construction in the vicinity of the daycare facility has been provided to the Commission. The daycare facility at MP 70.7 is located greater than 200 feet northwest of the nearest point (adjacent to the east side of County Road 8) of the construction work area. At that location, a tree line exists between the daycare facility and the construction work area and the tree line extends from County Road 8 to Gulf South's construction right-of-way. This tree line creates a natural barrier between construction activities and the daycare facility. In addition, Gulf South would install and maintain safety fencing on both sides of the active construction right-of-way extending 200 feet on each side of both County Road 8 and County Road 828. Safety fencing would be installed for a length of approximately 450 feet along the north side of Gulf South's right-of-way between County Road 8 and County Road 828 as an added measure of protection for the daycare facility.

Section 3.11 provides additional information on noise abatement and emission control technology. As necessary, disturbed or interrupted electrical, domestic water and septic, and communications utilities would be installed.

2.3.2.7 Utility Crossings

The proposed Project would cross Transco and Crosstex pipelines at 12 locations. Table 2.3.2.7-1 lists the approximate milepost and pipeline owner at each location.

Foreign pipelines will be crossed using subsurface boring techniques that would allow for a minimum clearance of 12 inches or the depth that may be required by state or local regulations, whichever provides greater protection. Bores beneath foreign pipelines would entail excavating pits on both sides of the feature and boring a horizontal hole equal to the diameter of the pipe (or casing, if required) at the depth of the pipeline installation. The pipeline section and/or casing then would be pushed through the bore. If additional pipeline sections were required, they would be welded to the first section of the pipeline in the bore pit before being pushed through the bore.

TABLE 2.3.2.7-1 Foreign Pipeline Crossings for the Proposed Southeast Expansion Project	
MP	**Pipeline Owner**
49.38	Crosstex
49.56	Crosstex
51.29	Crosstex
51.58	Crosstex
66.21	Crosstex
74.69	Crosstex
75.18	Crosstex
76.15	Crosstex
77.34	Crosstex
82.06	Transco
87.56	Transco
89.67	Transco

2.3.3 Aboveground Facilities Construction Procedures

The aboveground facilities would be constructed concurrent with pipeline installation, but construction would be conducted by special fabrication crews generally working separately from the pipeline construction spreads.

Construction of the compressor stations would involve clearing, grading, and compacting the sites to the surveyed elevations, where necessary, for placement of concrete foundations for buildings and to support skid-mounted equipment. Prefabricated segments of pipe, valves, fittings, and flanges would be shop- or site-welded and assembled at the compressor station site. The compressor units and other large equipment would be mounted on their respective foundations, and the compressor enclosures would be erected around them. Noise abatement equipment (including sound-attenuating enclosures around the turbines, exhaust stack silencers, and air inlet silencers) and emission control technology would be installed as needed to meet applicable federal, state, and/or local standards. Section 3.11 provides additional information on noise abatement and emission control technology. As necessary, electrical, domestic water and septic, and communications utilities would be installed.

Facility piping, both above and below ground, would be installed and hydrostatically tested before being placed in service. Controls and safety devices, such as the emergency shutdown system, relief valves, gas and fire detection facilities, and other protection and safety devices, would also be checked and tested. Upon completion of construction, all disturbed areas associated with the aboveground facilities would be finish-graded and seeded or covered with gravel, as appropriate. All roads and parking areas would be graveled. Additionally, the compressor station sites would be fenced for security and protection.

Construction of M/R stations, mainline valves, and pig launcher/receiver facilities not collocated with the compressor stations would generally be similar to that described above for compressor

station sites, and would entail site clearing and grading, installation and erection of facilities, hydrostatic pressure testing, cleanup and stabilization, and installation of security fencing around the facilities.

2.4 CONSTRUCTION SCHEDULE

Gulf South proposes to commence construction of the Southeast Expansion Project on September 1, 2007, assuming that the FERC has granted approval by July of 2007. The facilities, including installation of the proposed pipeline, compressor stations, and associated ancillary facilities, then would be completed in approximately four months and would be in service by December 31, 2007. The actual start date of construction, if the proposed Project is certificated, would depend on the Commission's environmental review process.

2.5 ENVIRONMENTAL TRAINING AND MONITORING

Gulf South has indicated that it would conduct environmental training for all company and construction contractor personnel prior to and during construction activities. Such training would focus on implementation of Gulf South's Plan and Procedures, but would also address Project-specific permit requirements, company policy and commitments, any protection procedures and restrictions associated with cultural resources or sensitive species/habitats, and any other pertinent job-related information.

During Project construction, environmental inspectors (EIs) would be responsible for monitoring and ensuring compliance with all environmental mitigation measures required by the FERC Certificate, if granted, and Gulf South's plans and Procedures as modified in this EIS (see Section 3.4). The EIs would have the authority to stop activities that violate the environmental conditions of these authorizations, state and federal environmental permit conditions, or landowner requirements, and order appropriate corrective actions if needed. Gulf South has indicated that it would be represented by at least one EI per construction spread, consistent with FERC's Plan. However, Gulf South's plans also indicate that the number and experience of EIs assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected. If the proposed Project were authorized, Gulf South would be required to develop and submit an Implementation Plan for our approval prior to construction. During our review of the Implementation Plan, we would consider the absolute number and qualifications of the EI personnel proposed by Gulf South.

Gulf South has indicated that it is willing to use a third-party monitoring program, consistent with other approved programs previously used by the Commission to ensure adequate oversight during construction.

Gulf South established an Internet website (http://www.gulfsouthpl.com/sefactsheet.asp), toll-free telephone number (1-877-972-8533), and e-mail address (southeastexpansionproject@ gulfsouthpl.com) to provide potentially affected landowners and stakeholders with a venue for providing comments or requesting additional information about the proposed Project.

2.6 OPERATION, MAINTENANCE, AND SAFETY CONTROLS

As described previously, the proposed pipeline and aboveground facilities would be designed, constructed, operated, and maintained to meet or exceed all safety standards as set forth in the DOT's *Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards* (49 CFR Part 192).

The pipeline would be constructed of welded carbon steel that meets or exceeds industry standards and would be covered with a protective coating to minimize rust and corrosion. To protect

against damage from external forces, the proposed pipeline would be buried at a minimum depth of 3 feet below ground. All welds joining each section of pipe would be visually inspected and x-rayed to ensure the integrity of the welds. Prior to being placed in service, the pipeline would be hydrostatically tested to verify its integrity and to ensure its ability to withstand the designed MAOP. A cathodic protection system would be installed to protect all underground pipeline facilities constructed of metallic materials from external, internal, and atmospheric corrosion. Additional information regarding safety standards is described further in Section 3.12.

During operations, Gulf South would conduct regular patrols of the pipeline right-of-way in accordance with the requirements of 49 CFR Part 192. The patrol program would include periodic aerial, vehicle, and/or pedestrian patrols of the pipeline facilities. These patrols would be conducted to survey surface conditions on and adjacent to the pipeline right-of-way for evidence of leaks, unauthorized excavation activities, erosion and wash-out areas, areas of sparse vegetation, damage to permanent erosion control devices, exposed pipe, and other conditions that might affect the safety or operation of the pipeline. The cathodic protection system would also be inspected periodically to ensure that it is functioning properly. In addition, intelligent pigs would regularly be sent through the pipeline to check for corrosion and irregularities in the pipe. Gulf South would keep detailed records of all inspections and supplement the corrosion protection system as necessary to meet the requirements of 49 CFR Part 192.

Routine operation and maintenance would also be performed at all aboveground facilities by qualified personnel. Safety equipment, such as pressure relief devices, fire detection and suppression systems, and gas detection systems would be maintained throughout the life of each facility. Mainline valves also would be inspected, serviced, and tested to ensure proper functioning.

Gulf South would establish and maintain a liaison with the appropriate fire, police, and public officials. This program would identify the available resources and responsibilities of each organization that may respond to a natural gas pipeline emergency and assist in developing coordination responsibilities.

Pipeline markers would be placed and maintained along the right-of-way at roadway crossings, railroad crossings, and other highly visible places to alert those contemplating working in the vicinity of the location of the buried pipeline. The markers would identify Gulf South as the operator and display telephone numbers to call if any abnormal conditions are detected.

Gulf South would also participate in the One-Call program. This program provides telephone numbers for excavation contractors to call prior to commencing any excavation activities. The One-Call operator would notify Gulf South of any planned excavation in the vicinity of the pipeline so that Gulf South could flag the location of the pipeline and assign staff to monitor activities if required.

Vegetation management procedures during operation would be performed in accordance with Gulf South's proposed Plan and Procedures and would include regular mowing, cutting, and trimming along most of the proposed 60-foot-wide permanent pipeline right-of-way. Routine vegetative maintenance clearing would not be performed more frequently than every three years unless requested or approved by appropriate state and local agencies. However, a corridor not exceeding 10 feet in width centered on the pipeline could be maintained annually in an herbaceous state, as required to facilitate periodic corrosion and leak detection surveys. Vegetation management is discussed further in Section 3.5.

2.7 FUTURE PLANS AND ABANDONMENT

Gulf South currently has no plans for future expansion of the facilities proposed. If additional demand for natural gas supplies requires future expansion, Gulf South would seek the appropriate authorizations from the FERC. When and if an application is filed, the environmental impact of the new proposal would be examined at that time.

Abandonment of the pipeline facilities would be subject to the approval of the FERC under Section 7(b) of the NGA and would comply with DOT regulations and specific agreements or stipulations made for the pipeline rights-of-way. An environmental review of any proposed abandonment would be conducted when the application is filed with the FERC.

3.0 ENVIRONMENTAL ANALYSIS

The environmental consequences of constructing and operating the proposed Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately afterward. Short-term impacts would continue for approximately three years following construction. Impacts were considered long-term if the resources would require more than three years to recover. Permanent impacts would occur as a result of activities that modify resources to the extent that they would not return to pre-construction conditions during the life of the proposed Project, such as with construction of a compressor station. We considered an impact to be significant if it would result in a substantial adverse change in the physical environment.

In this section we discuss the affected environment, construction and operational impacts, and propose mitigation measures for each resource. We evaluated these measures as well as proposed mitigation measures to determine whether or not additional steps would be necessary to further reduce impacts. Additional measures that we have identified appear as bulleted, boldface paragraphs in the text of the EIS. We are recommending that these measures be included as specific conditions to the Certificate that may be issued to Gulf South for the proposed Project.

Conclusions in this EIS are based on our analysis of environmental impacts and the following assumptions:

- Gulf South would comply with all applicable laws and regulations.
- The proposed facilities would be constructed as described in Section 2.0 of this EIS.
- Gulf South would implement the mitigation measures identified in its application and supplemental filings to the FERC.

3.1 GEOLOGY

3.1.1 Geological Setting

All proposed Project facilities, with the exception of the Delhi Compressor Station and the CenterPoint M/R Station, are located in the East Gulf Coastal Plain. The East Gulf Coastal Plain consists of flat to rolling topography broken by streams and river bottoms. The Delhi Compressor Station and CenterPoint M/R Station are located in the West Gulf Coastal Plain. The West Gulf Coastal Plain consists of low, rolling, slightly hilly terrain. The specific geologic formations traversed by the proposed Project are presented in Table 3.1.1-1.

The surface of Louisiana on which the Delhi Compressor Station and CenterPoint M/R Station are located is underlain by geologically young sedimentary deposits in or near rivers and deltas, including Holocene sediment deposited by the Red and Mississippi Rivers, which is present at the compressor station and meter station sites. Most surface exposures in Louisiana consist of Quaternary sediment. Holocene sediment deposited by the Mississippi, Ouachita, and Red Rivers, as well as other rivers and coastal marsh deposits, make up approximately 55 percent of the surface of Louisiana. The proposed pipeline would cross approximately 10.3 miles of Pliocene fluvial channel and marine deposits consisting of sands, clays, and silt loams; 70.8 miles of Miocene alluvial channel and alluvial plain deposits consisting of sandy silt, silt, clay, limestone, and dolomitic limestone; and 29.7 miles of Eocene marine and deltaic deposits consisting of clay, sand, sandstone, and shale (Table 3.1.1-1).

Within Mississippi, the proposed Project would lie within two sections of the East Gulf Coastal Plain Physiographic province: the Central Blacklands and Pine Hills Physiographic Districts. The Citronelle, Catahoula, Vicksburg Group-Forest Hill, Jackson, and Claiborne Formations (Mississippi Mineral Resources Institute [MMRI], 1976) underlie this area. Some rolling hills and other areas of ridges and valleys characterize the Central Blacklands Physiographic District with surface sediments consisting of sandy and silty loams. The Pine Hills District is characterized by rolling hills and steep-sided ridges and valleys with surface sediments consisting of clays and sands (Stewart, 2003).

Within Alabama, the proposed Project is located in the East Gulf Coastal Plain, south of the Fall Line that curves from the northwestern corner of Alabama to the Georgia border in east-central Alabama. The Fall Line is an important physical feature and separates the Coastal Plain from other regions to the north. Streams north of the Fall Line are generally swift with rocky bottoms, while streams south of this feature tend to be sluggish with muddy or sandy bottoms. The proposed Project extends into Alabama from Mississippi at the physiographic division known as the Timber Belt, which extends from the Gulf of Mexico northward for approximately 150 miles and is on the outer belt of the Coastal Plain. The area of Alabama where the proposed Project would cross, beginning at MP 104.4 and ending at MP 110.8, is underlain by the Gosport Sand and Lisbon Formation, Tallahatta Formation, Hatchetigbee Formation, alluvial, coastal, and low terrace deposits, and Tuscahoma sands geologic formations as shown on the Geologic Map of Alabama (Geological Survey of Alabama [GSA], 2006).

The elevation along the proposed Project undulates throughout the proposed Project area from eastern Simpson County, Mississippi, to Choctaw County, Alabama. The topography consists of rolling hills with slight to moderate slopes to the west, level to nearly level floodplains, level to gently sloping stream terraces, and gently sloping to steep uplands on the eastern portion of the proposed Project. However, slopes along the proposed Project range from 1 percent to as much as 30 percent. The topography along the proposed Project is mainly rolling hills with an area from approximately MP 85.0 to MP 90.0 exhibiting the most level terrain. The elevations along the proposed Project in Mississippi and Alabama range from approximately 200 to 400 feet above mean sea level (msl), whereas the elevation throughout Richland Parish, Louisiana, where the proposed Delhi Compressor Station and CenterPoint M/R Station would be located, ranges from 60 to 70 feet msl.

Some areas of moderately rugged topography would be encountered along the proposed Project route. As described in Section 2.3.2.5, Gulf South would use special two-tone construction techniques in these areas as listed in Table 2.3.2.5-1 to effectively work along these steeper slopes and all areas disturbed during pipeline construction would be finish-graded and restored as closely as possible to pre-construction contours during cleanup and restoration.

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) defines shallow bedrock as bedrock occurring in the upper 60 inches of the soil profile. A review of soil survey databases for the Project area indicate that shallow bedrock would not likely be encountered along the proposed pipeline route. Additionally, Gulf South indicated that based on review of topographic maps, soil conditions, and geologic formations crossed, it would be unlikely that bedrock would be encountered within 5 to 7 feet below ground surface. Since no shallow bedrock has been identified and the shallow bedrock that could be encountered would most likely consist of loosely consolidated, weathered sandstone and shale that should be easily workable with standard construction equipment and techniques, it is unlikely that bedrock blasting would be needed for the proposed Project. Should blasting become necessary, Gulf South would notify the FERC before blasting and would conduct all blasting and disposal of bedrock material in accordance with Gulf South's plans and Procedures and in compliance with applicable federal, state, and local laws, permits, and authorizations.

TABLE 3.1.1-1
Geologic Formations Underlying the Proposed Southeast Expansion Project

Cumulative Length Crossed (miles)	Geologic Formation	Description	Geologic Epoch
53.8	Catahoula-Alluvial Channel	Sandy silt, silt, and clay, interbedded with fine-grained sandstone layers, mica, and smectite. The silt and clay commonly display blocky to conchoidal rock fracture.	Miocene
0.7	Citronelle-Fluvial Channel	Yellow and red sands and clays, locally gray weathering, with much gravel near landward margin.	Pliocene
17.0	Vicksburg/ Chickasawhay-Alluvial Plain	Highly porous limestone and dolomitic limestone, interbedded with porous to compact dolomitic limestone.	Miocene
9.6	Forest Hill/Red Bluff Clay Shallow Marine/Marine	Soils are mainly deep, highly weathered silt loams with clays at varying depth. Broad ridges may have a loess cap, with occasional fragipans, sandstones, and dolomites occupying most ridges and upper side slopes, while lower side slopes, especially near major streams, are in upper Gasconade dolomite materials.	Pliocene
7.9	Jackson Group-Marine	Composed of calcitic clay and less prominent sand and marl beds, divided into Yazoo clay member, and Moodys calcitic marl member below.	Eocene
10.5	Cockfield-Deltaic	Massively bedded, very coarse to very fine grained, moderately sorted quartz sand. Colors range from moderate reddish-brown to white.	Eocene
4.4	Cook Mountain-Marine	Clay and sandstone; slightly silty and lignitic, minor glauconite, brown to brownish-gray, weathers brownish-gray to yellowish-gray; very fine grained, calcareous, glauconitic, gray to yellowish-brown; marine fossils.	Eocene
0.5	Kosciusko-Marine	Heterogeneous highly lenticular non-marine sections of sand and shale are dominant facies. Highly cross-bedded sands colored red, brown, yellow, purple, pink, violet, gray, and white.	Eocene
6.4	Kosciusko Cuestas-Marine	Heterogeneous highly lenticular non-marine sections of sand and shale are dominant facies. Highly cross-bedded sands colored red, brown, yellow, purple, pink, violet, gray, and white.	Eocene
**	Alluvium-Alluvial Plain	Gray to brownish silt, silty clay, some very fine sand, reddish-brown along the Red River. Shown only on past and present course of major streams.	Holocene

** Geologic Formation at the Delhi Compressor Station

Source: United States Geological Survey (USGS), 2006c

Gulf South would use the minimum charge explosives necessary to excavate the trench and place mats over the blast area to keep rock from becoming airborne. Additionally, Gulf South would implement all appropriate safety precautions to prevent injury to workers, livestock, and property, including safeguards such as flags, barricades, and warning signals.

The primary effect of pipeline construction on geological resources would consist of disturbances to topographical features found along the construction right-of-way. These disturbances to topography would be most apparent in relatively steep areas, such as the areas discussed above in areas where Gulf South plans to use two-tone construction. However, since all topographic features disturbed by pipeline construction would be finish-graded and restored as closely as possible to pre-construction contours during cleanup and restoration, and aboveground facilities have been sited in areas without any significant topographic relief, we believe that construction and operation of the proposed Project would not result in significant alterations or negative impacts to the topography or overall geologic setting occurring within the proposed Project area.

3.1.2 Mineral Resources

Subsurface mineral resources in the proposed Project area include oil, gas, coal, clay, lime, sand, and gravel. These resources are discussed below.

In Louisiana, Mississippi, and Alabama, petroleum and natural gas deposits are the main mineral resources. Petroleum resources are most common in the southern halves of Mississippi and Alabama. Louisiana ranks as one of the top energy producers in the nation. Gulf South consulted the Louisiana Department of Natural Resources (LDNR) Strategic Natural Resources Information System (SONRIS) (LDNR, 2006) database to identify active oil and gas areas along the proposed pipeline route. The proposed Delhi Compressor Station and CenterPoint M/R Station in Richland Parish are located near existing oil and gas fields; however, the wells within these fields are greater than 0.25 mile from these proposed facilities.

Gulf South used the Mississippi Automated Resource Information System Technical Center database to identify oil and gas resources in the Project area. Gulf South determined that none of the proposed Project's aboveground facilities are located within 0.25 mile of active, producing gas/condensate wells or producing oil wells in Mississippi. However, Gulf South did determine that the pipeline occurs within 0.25 mile of active producing gas/condensate wells and producing oil wells in Mississippi. Gulf South determined that the proposed pipeline crosses within 0.25 mile of three active producing natural gas wells, 14 producing oil wells, seven enhanced oil recovery injection wells, four saltwater disposal wells, and one sand and gravel mining operation (see Table 3.1.2-1). Of the active wells in Mississippi, six occur at least 1,000 feet from the proposed pipeline centerline, six occur 1,000 to 750 feet from the proposed pipeline centerline, six occur 750 to 500 feet from the proposed pipeline centerline, seven are 500 to 250 feet from the proposed pipeline centerline, two are 250 to 100 feet from the proposed pipeline centerline, and one is within 100 feet of the proposed pipeline centerline. The sand and gravel operation occurs approximately 240 feet from the proposed pipeline centerline. The one producing oil well that is within 100 feet would actually be 80 feet from the proposed Project near MP 69.6. Gulf South has indicated that they would work with the owner of this well to avoid disturbance to well operations.

Gulf South found no sources of information to show any active, producing gas/condensate wells or producing oil wells within the area of the Project in Alabama. In addition, no areas with active wells were observed in Alabama during field surveys conducted by Gulf South.

Because there would be little to no overlap regarding the depth of oil and gas operations and construction activity, affected oil and gas well operators would be compensated, if necessary, by new

drilling operations that would be conducted outside of the permanent right-of-way, and Gulf South would prohibit future oil and gas exploration within the permanent right-of-way; we believe that construction and operation of the proposed Project would not impact existing and/or future mineral sites and oil and gas field development.

Louisiana's leading non-petroleum minerals are salt and sulfur, lime, gypsum, crushed stone, and construction sand (Louisiana Geological Survey [LGS], 2006); however, Richland Parish where the proposed Delhi Compressor Station and CenterPoint M/R Station are located does not significantly contribute to these resources. The principal mineral resources for Mississippi include clay, lime, sand, gravel, and lignite. Lignite deposits occur at depths greater than 250 feet and are not economically recoverable at the present time in the area of the proposed Project. Currently, there are no underground or lignite surface mines in the area of the aboveground facilities and pipeline for the proposed Project (USGS, 1998).

In Mississippi, agricultural lime, bentonite, common clay, and crushed stone are surface mined in Smith County; crushed stone, common clay, and construction sand and gravel are mined in Jasper County; and sulfur (a by-product of natural gas production) and construction sand and gravel are mined in Clarke County. Eleven mineral fields with multiple active leases were identified within 0.25 mile of the proposed Project in Mississippi. However, surface mining operations within the state are generally on a small scale (USGS, 2004).

Gulf South has determined that five surface mining operations are located within 0.25 mile of the proposed Project's centerline of the pipeline. Of the five, one is not active based on aerial photography in September 2006. Active mineral leases were identified by reviewing Oil and Gas Production maps of Mississippi and Alabama State Oil and Gas Board (ASOGB) maps, and by performing field survey observations (MMRI, 2005; ASOGB, 2005).

The four remaining mining operations are owned and operated by the same company and are noted to be extensions of one original sand and gravel pit. The northernmost extent of that surface mine occurs over 200 feet south of the centerline of the pipeline, approximately 165 feet south of the construction right-of-way at MP 75.4. This mining operation is not anticipated to be impacted by the proposed Project due to the distance that the mine occurs from the temporary construction right-of-way. Gulf South is currently corresponding with the surface mine operators concerning potential expansion of mining operations; however, with the noted southern expansion of the surface mine, it is unlikely that the mine would extend in a northerly direction.

In Alabama, limestone, dolomite, marble, granite, sandstone, and quartzite are components of an important industry. However, no current data for active mineral field locations was available for Alabama. During field surveys conducted by Gulf South, no surface mines were identified within 0.25 mile of the proposed Project in Alabama. Given that there are few mineral resources located in the immediate vicinity of the proposed Project, and that known sites are inactive or would be avoided, we believe that no significant impacts to mineral resources would occur.

Table 3.1.2-1 presents the active mineral resources located within 0.25 mile of the proposed Project.

TABLE 3.1.2-1
Active Mineral Resources Within 0.25 Mile of the Proposed Southeast Expansion Pipeline

Milepost (MP)	County, State	Mineral Resource	Distance from the Proposed Centerline (feet)	Direction from the Proposed Centerline	Evaluation of Impacts from Construction and Operation
22.6	Simpson, MS	Oil – Production	259	South	None
22.7	Simpson, MS	Saltwater Disposal – Injection	417	South	None
22.7	Simpson, MS	Enhanced Oil Recovery Injection (on standby)	962	South	None
22.8	Simpson, MS	Oil – Production	1,206	North	None
22.9	Simpson, MS	Oil – Production	540	North	None
23.1	Simpson, MS	Enhanced Oil Recovery Injection (on standby)	1,277	South	None
23.4	Simpson, MS	Oil – Production	491	South	None
23.4	Simpson, MS	Enhanced Oil Recovery – Injection	911	North	None
58.1	Jasper, MS	Enhanced Oil Recovery – Injection	660	North	None
58.4	Jasper, MS	Oil – Production	247	North	None
58.8	Jasper, MS	Oil – Production	469	South	None
59.2	Jasper, MS	Oil – Production	503	South	None
69.4	Jasper, MS	Saltwater Disposal – Injection	1,181	North	None
69.5	Jasper, MS	Enhanced Oil Recovery – Injection	1,130	North	None
69.6	Jasper, MS	Oil – Production	80	South	Area would be flagged and barricaded. Necessary precautions would be taken to minimize impacts.
69.7	Jasper, MS	Oil – Production	502	South	None
69.7	Jasper, MS	Oil – Production	174	North	None
69.8	Jasper, MS	Enhanced Oil Recovery – Injection	885	South	None
69.8	Jasper, MS	Natural Gas – Production	841	North	None
69.9	Jasper, MS	Oil – Production	393	South	None
70.0	Jasper, MS	Oil – Production	1,044	South	None
70.0	Jasper, MS	Enhanced Oil Recovery – Injection	445	South	None
70.0	Jasper, MS	Natural Gas – Production	885	South	None
70.0	Jasper, MS	Natural Gas – Production	560	South	None
70.1	Jasper, MS	Oil – Production	591	South	None
75.4*	Jasper, MS	Sand and Gravel	240	South	None
84.0	Clarke, MS	Saltwater Disposal – Injection	774	North	None

TABLE 3.1.2-1
Active Mineral Resources Within 0.25 Mile of the Proposed Southeast Expansion Pipeline

Milepost (MP)	County, State	Mineral Resource	Distance from the Proposed Centerline (feet)	Direction from the Proposed Centerline	Evaluation of Impacts from Construction and Operation
96.3	Clarke, MS	Saltwater Disposal – Injection	448	North	None
96.5	Clarke, MS	Oil – Production	1,244	South	None

* Five surface mining operations owned by one entity, one is not active and the four remaining mining operations are noted to be extensions of one original sand and gravel pit.
Source: MMRI, 2005; ASOGB, 2005.

3.1.3 Paleontological Resources

Paleontological resources are the fossilized remains of prehistoric plants and animals, as well as the impressions left in rock or other materials as indirect evidence of the forms and activities of such organisms.

The proposed Delhi Compressor Station and CenterPoint M/R station site in Richland Parish, Louisiana, is located on Holocene age alluvial deposits. Though the possibility of encountering fossilized remains exists, no paleontological resources have been identified within the proposed Project area.

From a geological context, surface exposures in Mississippi and Alabama are very young, which affects the number and diversity of fossils. The oldest surface sediments are Cenozoic in age. The majority of sediments are Tertiary and Quaternary in age, which is older, lesser-used nomenclature for periods within the Cenozoic age; in addition, many sediments are less than 10,000 years old. Large portions of surface sediments were formed as parts of rivers, deltas, or swamps. These environments are less conducive to the preservation of fossils than marine environments. Thus, marine fossils are relatively uncommon in surface exposures.

No paleontological resources have been identified within the proposed Project area. Because of the limited exposure of fossil-bearing rock units crossed by the proposed Project, possible fossil-bearing formations within the proposed Project area are not likely to occur. However, if paleontological resources are discovered during the course of pipeline construction, Gulf South would follow its *Plan for the Unanticipated Discoveries of Historic Properties, Human Remains, or Potential Paleontological Evidence During Construction*. Based on the low probability of encountering these resources and Gulf South's adherence to its plans as necessary, we believe that construction and operation of the proposed Project would not significantly affect paleontological resources.

3.1.4 Geologic Hazards

Geologic hazards are defined by the American Geological Institute (Bates and Jackson, 1984) as "geologic conditions or phenomena that present a risk or are a potential danger to life and property, either naturally occurring or man-made." Geologic hazards potentially occurring in the vicinity of the proposed Project area include seismicity and faulting, soil liquefaction, slope failures/landslides, and ground subsidence, which are discussed below. Hazards such as volcanism are not relevant to the proposed Project area and are excluded from consideration here.

3.1.4.1 Seismicity and Faults

The USGS defines seismicity as "the geographic and historical distribution of earthquakes" (USGS 2006a). Louisiana, Mississippi, and Alabama lie within the geologic tectonic province known as the Gulf Coast Basin where thick sedimentary rocks overlie basement rock structures. Typical geologic structures of this province are generally characterized by southerly dipping and thickening sedimentary strata disrupted by salt domes and regional systems of relatively shallow, listric growth faults. These fault systems trend for considerable distances roughly paralleling the Gulf Coast. The growth faults are thought to have formed during periods of accelerated basin subsidence. Active movement is thought to have occurred during periods of rapid localized sediment deposition (Miocene and Oligocene epochs). Five earthquake epicenters have been recorded in Mississippi (USGS, 2006a) and 215 epicenters have been recorded in Alabama (GSA, 2006). The epicenters of these earthquakes occurred more frequently in the northern parts of Mississippi and Alabama and none were located 15 miles or less from the proposed Project area (NA.gov, 2006). Although it is difficult to quantify the probability of ground failure, it appears to be low in the proposed Project area.

Hazards associated with seismicity and faulting include ground shaking, surface rupture of faults, and offset along normal, reverse, or strike-slip faults. Earthquakes are caused by active faults. Gulf South indicates that there are no active faults in the proposed Project area.

Faulting can be especially hazardous to linear, rigid structures, such as pipelines, in which the ground is not moving the same distance or in the same direction. However, well-maintained pipelines constructed using modern arc-welding techniques have performed well in seismically active areas of the United States. Only large, abrupt ground displacements have caused serious impacts to those facilities. Based on the historical record and absence of active faults in areas near the proposed Project's corridor, we believe that the potential for seismicity and faulting does not represent a significant risk to the stability or safety of the proposed Project.

3.1.4.2 Soil Liquefaction

Soil liquefaction is a condition that occurs when loose, cohesionless, saturated soil (usually well-sorted sand) is subjected to vibration or shock waves. During liquefaction, pore water inhibits grain-to-grain contact, and the strength of the soil is greatly reduced such that the soil may act like a viscous liquid with the ability to flow. Soil liquefaction can lead to landslides and earthflows, movement or failure of foundations and footings, and mobility of buried objects.

Few soils along the proposed pipeline route are well-drained to poorly-drained, as discussed in Section 3.2. Thus, there is little added risk for soil liquefaction from saturated soil conditions. Because soil liquefaction risk is closely related to seismic risk, which was previously described as low within the proposed Project area, the potential for soil liquefaction is similarly low. Furthermore, the pipeline and associated facilities would be designed and constructed in accordance with the standards specified in 49 CFR Part 192, *Minimum Federal Safety Standards for the Transportation of Natural and Other Gas by Pipeline,* which should adequately address the low potential for soil liquefaction. Given the low seismic risk in the area and the methods that would be used to construct the proposed pipeline and associated facilities, we believe that soil liquefaction does not represent a significant risk to the stability or safety of the proposed Project.

3.1.4.3 Slope Failures/Landslides

Several factors contribute to slope failures and subsequent landslides, including the degree of slope or tilt of geologic materials, the composition of the materials, the amount of man-made disturbance

of the materials, proximity to seismic activity, and the amount of rainfall exposure. Generally flat areas were selected for the location of the proposed compressor and M/R sites; therefore, slope failure is not expected at aboveground facility locations. However, slope failures and landslides represent a potential hazard along portions of the proposed Project route that would traverse areas of side slopes and rolling terrain. Factors that would increase the potential for slope failures along slopes and rolling terrain include cutting along slopes, the weight of construction equipment, and unusually high precipitation.

The proposed Project is located in recorded areas of moderate susceptibility/low landslide incidence in Simpson, Smith, and Jasper Counties, Mississippi. Portions of the pipeline would encounter recorded areas of high susceptibility/moderate incidence in Smith (from approximately MP 36.0 to MP 42.4), Jasper (from approximately MP 53.7 to MP 73.5), and Clarke Counties (from approximately MP 75.7 to MP 84.8), in Mississippi. Choctaw County, Alabama is reportedly in a low incidence area.

Construction of the pipeline would be accomplished in accordance with Gulf South's plans, which includes measures to control runoff and erosion that would minimize the potential for slope failures (see Section 2.3). In addition, pre- and post-construction inspections would identify areas of risk, and continued monitoring along slopes would likely identify any significant landslide hazards before they develop. Gulf South would also implement specialized two-tone construction techniques to provide for safe working conditions in areas potentially susceptible to slope failures (see Section 2.3.2.5). Based on the characteristics of the proposed Project area and Gulf South's adherence to its identified construction and monitoring measures, we believe that potential impacts from slope failures and landslides would be prevented or effectively minimized.

3.1.4.4 Ground Subsidence

Ground subsidence is a lowering of the land-surface elevation that results from changes that take place underground. Common causes of land subsidence include dissolution of limestone in areas of karst terrain; collapse of underground mines; and pumping of water, oil, and gas from underground reservoirs.

Three areas of karst topography were identified along the proposed Project in Smith, Jasper, and Clarke Counties, Mississippi. These flat-lying carbonate rock areas may produce solution sinkholes, collapse sinkholes, and cover-collapse sinkholes (NA.gov, 2006). These areas, which occur from MPs 36.0 to 42.4, MPs 53.7 to 73.5, and MPs 75.7 to 84.8, are further classified as fissures, tubes, and caves that are generally less than 1,000 feet long and 50 feet or less in vertical extent, and occur in gently dipping to flat-lying beds of carbonate rock beneath an overburden of non-carbonate material about 10 feet to 200 feet in thickness. However, review of USGS topographic quadrangle maps in this area did not identify any active karst features such as sinkholes or springs at the land surface. Karst topography along the proposed Project was not present in Louisiana, Alabama, or Simpson County, Mississippi.

As described in Section 3.1.2, the proposed Project would traverse areas in Louisiana, Mississippi, and Alabama where oil and natural gas extraction is common. Extraction of oil and gas from sources underlying the proposed Project facilities has the potential to cause ground subsidence (USGS 2006b, USGS 2006c).

Ground subsidence can affect pipelines and aboveground facilities by causing a loss of support that would result in bending or rupture of pipelines and weaken the foundations of aboveground facilities. However, the proposed Project facilities would be designed and constructed to meet or exceed the federal safety standards set forth in 49 CFR Part 192, *Minimum Federal Safety Standards for the Transportation of Natural and Other Gas by Pipeline*, which should ensure integrity of the Project facilities and minimize the potential for any pipe failures due to ground subsidence. Additionally, Gulf South would conduct

regular patrols of the pipeline right-of-way during operations to identify conditions, including any areas of ground subsidence that might affect the safety or operation of the pipeline. Adherence to these standards and procedures would minimize the potential for any risk to the proposed Project posed by ground subsidence.

3.1.5 Conclusions Regarding Impacts to Geologic Resources

The proposed Project is unlikely to affect paleontological resources, and is also unlikely to encounter bedrock along the pipeline route. However, Gulf South has plans in place to address these issues should the need arise. Potential impacts to mineral sites and oil and gas producing areas would be largely avoided due to routing and through negotiations with affected parties, as applicable. The largest potential for effects would be related to alteration of topography, especially in steep or moderately rugged terrain. These potential effects would be effectively mitigated through use of special construction techniques and restoration of contours. Geologic hazards, such as seismic activity and liquefaction would not likely cause a significant threat to construction or operation of the proposed facilities. The potential for other hazards, such as slope failure and subsidence, would be minimized through the use of special construction techniques, restoration, and post-construction monitoring. Given the resources, level of impacts, and impact avoidance, minimization, and mitigation measures described above, we believe that the proposed Project would not have a significant impact on geological resources nor would there be more than a negligible risk to the proposed pipeline from geologic hazards.

3.2 SOILS

3.2.1 Existing Soils

We analyzed data for soils traversed by the proposed Project using the USDA NRCS (formerly the Soil Conservation Service) Soil Survey Geographic (SSURGO) (NRCS, 2006a) databases for Richland Parish, Louisiana, Simpson, Smith, Jasper, and Clarke Counties, Mississippi, and Choctaw County, Alabama. These soil associations, along with a description of their major characteristics, are listed in Appendix C (Table C-1). Soils found at the location of the proposed aboveground facilities and their descriptions are listed in Appendix C (Table C-2).

The proposed Project would be located in four Major Land Resource Areas (MLRA), including the Southern Mississippi River Alluvium (MLRA 131), the Southern Mississippi Valley Loess (MLRA 134), the Southern Coastal Plain (MLRA 133), and the Alabama and Mississippi Blackland Prairie (MLRA 135) (NRCS, 2006b). The Southern Mississippi River Alluvium MLRA is dominated by Alfisol, Vertisol, Inceptisol, and Entisol soils characterized as very deep, dominantly poorly-drained and somewhat poorly-drained, and dominantly loamy or clayey. The Southern Mississippi Valley Loess MLRA is dominated by Alfisol, Entisol, Inceptisol, and Ultisol soils characterized as very deep or deep, medium textured, having a thermic soil temperature regime, having an udic soil moisture regime, and having mixed mineralogy. The Southern Coastal Plain MLRA is dominated by Ultisol, Entisol, and Inceptisol soils characterized as very deep, somewhat excessively-drained to poorly-drained, and loamy. The Alabama and Mississippi Blackland Prairie MLRA is dominated by Inceptisol and Veritsol soils characterized as shallow to very deep, generally well-drained to somewhat poorly-drained, and loamy or clayey.

3.2.2 Major Soil Characteristics

Several soil characteristics have the potential to affect, or be affected by, construction and operation of the proposed Project, including the following: erosion hazard, drainage class, presence of hydric soils, compaction potential, presence of shallow bedrock, revegetation potential, and prime

farmland designation. The characteristics of the various soil units crossed by the proposed pipeline are compiled in Appendix C (Table C-1), and discussed further below.

3.2.2.1 Erosion Potential

Erosion is defined as the wearing away of the land surface by water, wind, ice, or other geologic events (NRCS, 2006a). Erosion potential is defined based on land capability subclass as severe, moderate, and low. The potential for soil erosion varies along the proposed pipeline route, with about 26 percent of the soils classified as having a low erosion potential, 31 percent as having a moderate erosion potential, and about 43 percent of the soils as having a severe erosion potential. Of the soils affected by the proposed aboveground facilities, approximately 1 percent have a low erosion potential, 33 percent have a moderate erosion potential, and 66 percent have a severe erosion potential (see Appendix C). Severe erosion potential soils would generally be confined to areas of side slope and rolling terrain.

3.2.2.2 Drainage Class

The drainage class of a soil is the range of its relative wetness under natural conditions. Soils with good drainage lose water and have low wetness, while soils with poor drainage retain water and have high wetness. Differences in drainage properties are typically attributed to grain size and sorting. Well-sorted or coarse-grained soils have more pore space and thus are better drained. Poorly-sorted or fine-grained soils have less pore space and water drains poorly. The NRCS recognizes seven natural soil drainage classes: excessively-drained, somewhat excessively-drained, well-drained, moderately well-drained, somewhat poorly-drained, poorly-drained, and very poorly-drained (NRCS, 2006a).

There are very few, very poorly-drained soils (0.08 mile) crossed by the proposed pipeline. There are approximately 6.68 miles of poorly-drained soils that exist between MP 15.4 to MP 103.0. Approximately 13.75 miles of somewhat poorly-drained soils exist between MP 1.6 to MP 95.9. The Southern Natural M/R Station and MLV No. 4 are located in areas of somewhat poorly-drained soils (Appendix C).

3.2.2.3 Presence of Hydric Soils

Hydric soil is defined by the USDA as soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation (NRCS, 2006c). Soils that formed under hydric conditions in their unaltered state are still considered hydric when artificially drained or altered for such purposes as agricultural use. Hydric soils are typically poorly-drained, and the presence of hydric soils is one of the criteria used for defining wetlands (NRCS, 2006c). Hydric soils may be prone to compaction and rutting. Approximately 88 percent of the soils that would be crossed by the proposed pipeline and 72 percent of the soils that would be affected by the aboveground facilities are classified as hydric (see Appendix C). Given that most of the soils along the Project would be in managed timber plantations, most hydric soils are likely to be relatively undisturbed.

3.2.2.4 Compaction Potential

Soil structure, including strength and drainage abilities, is altered when soils are compacted. The compaction of soils results from the decreasing of pore space and water-retention capacity. Susceptibility of soils to compaction varies based on moisture content, composition, grain size, and density of the soil. Poorly-drained and fine-grained silt and clay soils are the most likely soils to

experience compaction. Consequently, soil compaction is of particular concern in agricultural areas where crop yields could be adversely affected. However, given that most soils crossed would be in uplands with topography unsuitable for the development of fine-grained silt and clay soils, no soils crossed by the proposed Project are listed as having severe compaction issues.

3.2.2.5 Revegetation Potential

Revegetation potential is the rating of the ability of a soil to support vegetation efforts following construction-related disturbance. Gulf South evaluated the potential for revegetation of each soil type that would be affected by construction of the proposed pipeline by assessing such factors as soil texture, drainage properties, wetness, and slope. Taking these factors into account, three general classes were defined for revegetation potential including good, fair, and poor (Appendix C). Gulf South determined that the soils crossed by the pipeline are rated as having good (47.6 miles) and fair (63.2 miles) revegetation potential. Of the soils that would be affected by the proposed aboveground facilities, 56 percent have good revegetation potential and 44 percent have fair revegetation potential. None of the soils that would be traversed have a poor revegetation potential.

3.2.2.6 Prime Farmland Designation

Prime farmland soils are defined by the USDA as those that are best suited for food, feed, forage, fiber, and oilseed crops. These soils have properties that favor the economic production of sustained high yields of crops (NRCS, 2006d). Prime farmland is represented by many soil associations and series and does not need to be actively cultivated to be classified as prime farmland. Any undeveloped land with high crop production potential can be included in this classification. Prime farmland is an important resource because it provides the highest crop yield per unit of energy expended. Approximately 58 percent of the soils that would be affected by the proposed pipeline, and 58 percent of the soils that would be affected by the proposed aboveground facilities, are classified as prime farmland (Appendix C).

3.2.3 General Impacts and Mitigation

Construction activities associated with the proposed Project, such as clearing, grading, trenching, backfilling, and restoration could temporarily and/or permanently affect one or several soil characteristics. Generally, the most significant effects to soils resulting from construction activities include increased erosion and compaction potential, reduced soil productivity and revegetation potential, and altered drainage abilities.

With appropriate stabilization and revegetation, long-term or permanent impacts to soils would not occur during operation of the proposed Project except for loss of function under constructed impermeable structures such as buildings associated with compressor stations and M/R stations.

To minimize and mitigate impacts to soils as well as other resources, Gulf South developed its plans, which include the following soils-related measures:

- The deployment of at least one EI for each construction spread. The EI would have peer status with the other inspectors and would have the authority to stop activities that violate the environmental conditions of the FERC Certificate or other authorizations and order corrective action(s).

- Limiting Project-related ground disturbance to the construction right-of-way, ATWSs, pipe storage and contractor yards, borrow and disposal areas, access roads, and other areas approved in the Certificate.

- Minimizing the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area in actively cultivated or rotated croplands and pastures, residential areas, hayfields, wetlands and other areas at the landowner's or land managing agency's request.

- Installing temporary erosion controls immediately after the initial disturbance of soil. Erosion controls would be properly maintained throughout construction and repaired within 24 hours, if found ineffective. Mulch, which can consist of straw, hay, or erosion control fabric, would be used to stabilize the soil surface.

- Installing sediment barriers (such as silt fences and/or staked hay or straw bales, or sand bags) at the base of slopes adjacent to road crossings, to prevent siltation into waterbodies or wetlands crossed by or near the construction work area. These barriers would remain in place until revegetation is successful.

- Testing topsoil and subsoil for compaction at regular intervals in areas disturbed by construction activities. If either the subsoil or topsoil is severely compacted, a paraplow or other deep tillage device would be used to break up the soils. In areas where the topsoil was segregated, the subsoil also would be plowed before replacing the segregated topsoil.

- Revegetating or stabilizing areas disturbed by Project-related activities in accordance with written recommendations from local soil conservation authorities or the request of the landowner or land management agency. All turf, ornamental shrubs, and specialized landscaping would be restored in accordance with the landowner's request or the landowner would be compensated.

- Confirming revegetation efforts through post-construction monitoring of all disturbed areas.

3.2.3.1 Erosion

Soil susceptibility to erosion varies along the proposed pipeline route and is a function of variables such as soil type, topography, vegetation, and climate. The majority of soils that would be crossed by the proposed pipeline and affected by the proposed aboveground facilities have severe erosion potential. Soil erosion could occur during construction. Vegetation clearing, grading, topsoil segregation, open trenching, and backfilling destabilize the soil material and make it susceptible to water and wind erosion. In general, the potential for soil erosion along the construction right-of-way would be more pronounced in areas of side slopes and rolling terrain. Soils are most susceptible to erosion after vegetation is removed and before reestablishment of a vegetative cover after the pipeline is installed. Soil erosion also would result from off-road vehicle traffic on the right-of-way following construction. Soil erosion would impact a soils ability to maintain its structure and support vegetation which would affect several other resources including wildlife and land use.

To minimize the impacts of soil erosion, Gulf South would implement several erosion control measures (e.g., slope breakers, silt fencing, and mulch) described in its plans, which would control runoff and reduce the duration of soil disturbance. In addition to adhering to its plans, Gulf South would also develop and implement its SWPPP. The SWPPP would incorporate the requirements for minimizing and mitigating upland erosion and revegetation described in its plans, and would further detail the erosion

control structural best management practices, inspection procedures, and reporting protocols to be implemented during construction of the proposed Project.

3.2.3.2 Compaction Potential

Compaction damages the structure of a soil and restricts the transport of air and water to plant roots. As a result, soil productivity and plant growth rates may be reduced. None of the soils that would be crossed by the proposed pipeline or affected by the aboveground facilities are considered prone to compaction due to the lack of hydric soils or poor drainage. Use of the construction right-of-way, ATWSs, and access roads by heavy construction equipment would result in soil compaction. The degree of compaction would depend on the composition, grain size, density, and moisture content of the soils at the time of construction.

As described in Gulf South's plans and Procedures, measures such as restricting vehicular traffic, reducing loads, employing lower ground-pressure equipment, protecting topsoil in spoil piles separate from subsoil spoil piles, and rescheduling certain activities may be used when soil moisture is high to avoid and minimize compaction and rutting.

3.2.3.3 Revegetation Potential

Because all of the soils that would be disturbed during construction have fair to good revegetation potential, restoring vegetation in accordance with Gulf South's plans should not be of significant concern across most of the proposed pipeline route. Revegetation is necessary for stabilization and restoration of the soils in the construction right-of-way, ATWSs, and areas adjacent to access roads. Revegetation potential may be inhibited by soil erosion, loss of soil productivity through soil compaction, damage to soil structure, loss of soil fertility, damage to drainage systems, and unsuitable seed selection, methods, or planting conditions.

To avoid or minimize these conditions, and as described above and in Section 2.3, Gulf South would return the construction right-of-way, ATWSs, and pipe storage and contractor yards to pre-construction contours to the extent feasible; control erosion by implementing the procedures in its plans; segregate and de-compact soils and spread topsoil on the right-of-way during final cleanup; repair any damaged drainage systems; place soil nutrients and lime in upland areas; and seed all disturbed areas. Furthermore, Gulf South would consult with the local soil conservation authorities to determine the appropriate seed mixtures for stabilization and permanent erosion control. We are recommending in Section 3.5 that Gulf South consult with the LDWF, the ADCNR, and the MNHP regarding seeding mixtures and revegetation.

Gulf South would be responsible for successful revegetation of all disturbed areas, and it would follow its plans to ensure that all mitigation is sufficient. Gulf South would conduct at least two years of post-construction monitoring of all work areas to verify successful revegetation or determine the need for additional restoration. In accordance with its plans, revegetation would be considered successful if the density and cover of non-nuisance vegetation were similar in density and cover to adjacent undisturbed lands. If vegetation cover and density were not similar or if there were excessive noxious weeds after two full growing seasons, a professional agronomist would determine the need for additional restoration measures. In agricultural areas, revegetation would be considered successful if crop yields in areas affected by construction were similar to those in adjacent, undisturbed areas.

Gulf South would take measures to control unauthorized vehicle access to the proposed pipeline right-of-way during operation. In forested lands, these measures may include signs, fences with locking gates, slash and timber barriers, or planting appropriate trees or shrubs to block access to the

right-of-way. Gulf South would coordinate with affected landowners regarding the installation of access barriers on their property.

3.2.3.4 Mixing of Topsoil and Subsoil

Unless the landowner or a land management agency approves otherwise, Gulf South would prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or the trench. This segregation of topsoil would occur in active croplands and pastures, residential areas, hayfields, and other areas as requested by landowners or land management agencies. A maximum of 12 inches of topsoil would be stripped, if available, and the entire topsoil layer would be segregated in areas with less than 12 inches of topsoil available. Topsoil would not be used to pad the proposed pipeline.

3.2.3.5 Rocks

Introduction of rock to surface soil layers would not be of concern across the proposed pipeline route as it is unlikely that shallow bedrock would be crossed by the proposed pipeline route. However, if shallow bedrock is encountered, trenching and mixing of the excavated materials in these areas could bring large rocks to the surface, which would adversely impact soil productivity and agricultural practices. In accordance with its plans, Gulf South would remove excess rock from at least the top 12 inches of soil in all rotated and permanent cropland, hayfields, pastures, residential areas, and other areas at the landowner's request. Following construction and restoration, the size, density, and distribution of rock in all construction work areas would be similar to that in adjacent areas not affected by construction. Thus, no significant impacts are anticipated as a result of pipeline construction through areas of shallow bedrock.

3.2.3.6 Drainage Systems and Drainage Patterns

Heavy equipment traffic and trenching along the construction right-of-way could damage existing drainage systems or affect existing drainage patterns, thereby affecting farm management by causing wet, unworkable soil conditions. Future crop production would likely be lowered if such damages were not corrected. Gulf South would be responsible for ensuring that all areas affected by construction activities were finish-graded and restored as closely as possible to pre-construction contours. Gulf South indicated that no known drainage structures would be crossed by the proposed Project. However, Gulf South would continue to work with property owners to identify locations of existing drainage structures that could be damaged during construction. If active drainage tiles, culverts, or other drainage facilities were damaged during construction, Gulf South would replace or repair them to a condition that is equal to or better than their pre-construction condition. Although damage to drainage structures and patterns would result in short-term impacts, the corrective procedures to be implemented by Gulf South would avoid or minimize any long-term impacts.

3.2.3.7 Prime Farmland

The NRCS defines prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses" (NRCS, 2006d). Soils classified as prime farmland have few or no rocks, a dependable water supply, a favorable growing season, are not saturated for long periods of time, typically do not flood during the growing season, and are permeable to air and water. Prime farmland is an important resource because it provides the highest crop yield per unit of energy expended. The NRCS determines the prime farmland status of all soil associations that have been surveyed, and therefore this information is available directly from the soil survey databases. Approximately 58 percent of the soils that would be affected by

the proposed pipeline are classified as prime farmland; however, most of this is currently classified as either upland forest or pine plantation.

Gulf South would implement the measures included in its plans to minimize and mitigate any impacts to prime farmland soils. Virtually all impacts to prime farmland soils resulting from construction and operation of the proposed pipeline would be temporary because the proposed pipeline would be buried, and disturbed areas within the construction and permanent rights-of-way would largely revert to their preconstruction uses following restoration. However, the footprint of aboveground facilities would permanently affect some prime farmlands. Operation of the Delhi Compressor Station would affect about 69.5 acres of prime farmland. In addition, designated prime farmland located at the CenterPoint and Southern Natural M/R Stations, as well as at various valves and other minor facilities, would be lost as these areas would be converted to an industrial/commercial land use.

Farmland Conversion Impact Rating documentation would not be required for the proposed Project since it would not be completed by or with assistance from a federal agency, as specified by the Farmland Protection Policy Act. Given the prevalence of prime farmland soils within the affected counties and parishes, the permanent impacts to prime farmland soils associated with construction and operation of the proposed Project aboveground facilities would be less than significant.

3.2.4 Conclusion

Construction of the proposed Project would result in several affects to soils. However, Gulf South would be required to control erosion, test and mitigate for compacted soils, protect topsoil, repair any damaged drainage systems, and revegetate disturbed areas. Furthermore, Gulf South would implement its SPCC Plan and manage contaminated soils should they be encountered. Although a small amount of prime farmland would be permanently affected at the proposed aboveground facilities, these impacts would be minor overall and potential impacts to prime farmland along the proposed pipeline route would be minor and temporary. Given the impact minimization and mitigation measures described above, we believe that soils would not be significantly affected by construction and operation of the proposed Project.

3.3 WATER RESOURCES AND FISHERIES

3.3.1 Groundwater

3.3.1.1 Existing Groundwater Resources

Along the proposed Project route, groundwater is a significant source of drinking water in selected areas. Groundwater is also used for agricultural, industrial, and municipal uses. Although depth to groundwater is variable along the proposed pipeline route, groundwater is often found near the ground surface, and the proposed Project is likely to encounter groundwater during construction activities.

Major aquifers underlying the proposed Project include the Mississippi River Alluvial Aquifer System, the Coastal Lowlands Aquifer System, and the Mississippi Embayment Aquifer System (United States Department of the Interior [USDI], 2006). Although all of the listed aquifers are used, aquifers contributing major drinking water supplies underlain by the proposed Project include the Coastal Lowlands Aquifer, and to a much smaller extent, the Mississippi Embayment Aquifer. Additional information on the aquifers that occur along the proposed Project route, as well as sole-source aquifers, wellhead protection areas, wells, springs, and contaminated groundwater, is presented below.

Mississippi River Alluvial Aquifer

The proposed Delhi Compressor Station would be underlain by the Mississippi River Alluvial Aquifer in Richland Parish, Louisiana. The Mississippi River Alluvial Aquifer is hydraulically connected with the Mississippi River and its major tributaries and is recharged by direct infiltration of rainfall through the overlying silt and clay layers. Groundwater is typically encountered within 30 to 40 feet of the ground surface. Approximately 353.6 million gallons per day (mgd) are withdrawn from this aquifer for irrigation and industrial uses (LDEQ, 2003). The quality of water from this aquifer is considered relatively poor due to the presence of arsenic and poor taste and odor qualities.

Coastal Lowlands Aquifer

In Simpson, Smith, and Jasper Counties, Mississippi, proposed pipeline facilities would be underlain by the Coastal Lowlands Aquifer. Primary recharge of this aquifer occurs from direct infiltration of rainfall in the stream and upland outcrop areas. Water also moves between overlying alluvial and terrace aquifers according to hydraulic head differences. Groundwater in this aquifer occurs at maximum depths ranging from 200 feet above msl to 2,000 feet below msl. Approximately 1 billion gallons per day of water are withdrawn from this aquifer for agricultural, industrial, and municipal uses (USGS, 2005).

Mississippi Embayment Aquifer

In Jasper and Clarke Counties, Mississippi, and Choctaw County, Alabama, proposed pipeline facilities would be underlain by the Mississippi Embayment Aquifer. This aquifer is recharged by infiltration of rainfall in river valleys, lateral and upward movement of water from adjacent and underlying aquifers, and overbank stream flooding. The amount of recharge from rainfall depends on the thickness and permeability of the silt and clay layers. Approximately 433 mgd are withdrawn from this aquifer for agricultural, industrial, and municipal uses (USGS, 2005).

Sole-Source Aquifers

Sole-source or principal-source aquifers are defined by the EPA as those that supply a minimum of 50 percent of the drinking water used in the area overlying the aquifer. The areas served by these aquifers may not have readily available alternate water sources. No sole-source aquifers would be crossed or otherwise impacted by the proposed Project (USEPA, 2006).

Wellhead Protection Areas

Wellhead protection areas have been established by the LDEQ, MDEQ, and ADEM to protect public drinking water supplies. Based on a search of LDEQ, MDEQ, and ADEM databases, no designated wellhead protection areas would be crossed or are located in the vicinity of the proposed Project.

Wells and Springs

Based on consultation with the Louisiana Department of Transportation and Development (LDTD), Public Works and Water Resources Division's Water Well Registration File (LDTD, 2007), MDEQ, ADEM, database searches, and field observations, two private wells have been identified on the Delhi Compressor Station land parcel in Louisiana and five private wells and four public wells have been identified within 150 feet of the construction right-of-way in Mississippi. No wells were located within 150 feet of the construction right-of-way in Alabama. These wells and their locations relative to the

proposed Project are listed in Table 3.3.1.1-1. Because the locations of wells listed in agency databases are not exact, prior to construction Gulf South would confirm that no wells are located within the construction right-of-way. Based on agency consultations and field surveys, no springs have been identified within 150 feet of the proposed construction right-of-way and aboveground facility boundaries.

TABLE 3.3.1.1-1
Wells Located Within 150 Feet of the Proposed Southeast Expansion Project

Well Type	County[1]/ Parish[2]	Approximate MP[3]/Associated Facility	Approximate Well Depth (feet)	Approximate Distance from Pipeline Centerline (feet)	Distance from Construction Right-of-Way (feet)
42-inch Mainline Pipeline					
Private	Simpson, MS	14.0	247	166.4	126.4
Public	Simpson, MS	16.1	290	68.4	48.4
Public	Smith, MS	39.0	69	90.6	30.6
Public	Smith, MS	44.6	251	235.5	105.5
Public	Smith, MS	44.8	714	232.0	101.8
Private	Jasper, MS	52.9	65	202.7	47.7
Private	Jasper, MS	65.9	430	229.0	128.9
Private	Jasper, MS	68.9	416	52.7	6.7
Private	Clarke, MS	91.2	416	137.7	7.5
Aboveground Facilities					
Private	Richland, LA	Delhi Compressor Station	100	Within facility boundaries	Within facility boundaries
Private	Richland, LA	Delhi Compressor Station	101	Within facility boundaries	Within facility boundaries

1 MS = Mississippi
2 LA = Louisiana
3 MP = Milepost

Contaminated Groundwater

Based on agency consultations with the MDEQ, a review of public databases maintained by the LDEQ, MDEQ, and ADEM, and a review of a private database (Banks Information Solutions, Inc., 2006a and 2006b), which maintains state and federal records, Gulf South has identified 15 sites containing potentially contaminated groundwater within a 1-mile radius of the proposed Project facilities. These sites are described in Table 3.3.1.1-2.

TABLE 3.3.1.1-2
Potential Contaminated Groundwater Sites Within 1 Mile of the Proposed Southeast Expansion Project Centerline

MP[1]	Parish/ County/State[2]	Name	Type[3]	Distance/Direction	Physical Location
45.1	Smith, MS	Shell Tallahala Creek Field	UST	0.68 mile south of the centerline (3,585 feet)	RT 2 Box 72-C Bay Springs, MS 39422
49.5	Jasper, MS	Mississippi Highway Department	UST	0.16 mile north of the centerline (847 feet)	RT 4 Box 338 Carthage, MS
51.1	Jasper, MS	MDOT Meridian Area Headquarters	UST	0.99 mile north of the centerline (5,241 feet)	5409 1st Street Meridian, MS
51.1	Jasper, MS	MDOT Maintenance Area Headquarters	UST	0.90 mile north of the centerline (4,772 feet)	U.S. Highway 11 Purvis, MS
52.0	Jasper, MS	Georgia Pacific Chip N Saw	CERCLA	0.39 mile north of the centerline (2,033 feet)	Data not listed
57.2[4]	Jefferson, MS	MDOT	UST	0.94 mile south of the centerline (4,959 feet)	Highway 28 East Fayette, MS
66.9	Jasper, MS	Dixon S. Service Center	UST	0.14 mile north of the centerline (727 feet)	Highway 528 Heidelberg, MS 39439
68.9[4]	Holmes, MS	MDOT Durant Headquarters	UST	0.22 mile south of the centerline (1,144 feet)	Highway 51 South West, MS
68.9[4]	Hinds, MS	MDOT Jackson Project Headquarters	UST	0.60 mile south of the centerline (3,163 feet)	2802 Kingswood Ave. Jackson, MS
69.0	Jasper, MS	Country Cash	UST	0.62 mile south of the centerline (3,276 feet)	Highway 528 Heidelberg, MS 39439
69.0	Jasper, MS	Heidelberg Exxon	UST	0.42 mile south of the centerline (2,206 feet)	2507 North Pine Ave. Heidelberg, MS 39439
69.0	Jasper. MS	Heidelberg Warehouse	UST	0.53 mile north of the centerline (2,815 feet)	Highway 528 Heidelberg, MS 39439
69.5	Jasper, MS	Reagan Equipment Co.	UST	0.81 mile south of the centerline (4,268 feet)	P.O. Box 285 Heidelberg, MS 39439
70.8	Jasper, MS	MDOT Holly Springs Headquarters	UST	0.86 mile north of the centerline (4551 feet)	State Highway 7 Holly Springs, MS
95.3[4]	Jackson, MS	UHAUL 17868	UST	0.03 mile north of the centerline (156 feet)	2903 Shortcut Road Pascagoula, MS

Notes:
1 MP = Milepost
2 MS = Mississippi
3 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
UST = Underground Storage Tanks, Leaking Underground Storage Tanks
4 Site listed as being within 1 mile of pipeline based on inaccurate data from the MDEQ Mississippi Automated Resource Information System. Per conversation with the MDEQ, Gulf South determined the site is not within 1 mile of the Project area; the true site location is listed in the "Physical Location" column.

3.3.1.2 General Impacts and Mitigation

In general, the potential for temporary and permanent impacts to groundwater resulting from construction and operation of the proposed Project would depend primarily on any localized changes to existing groundwater flow paths. The proposed Project would not affect changes in the overall quantity of groundwater, which is determined by the quantity of recharge to the aquifer, except to the minimal

extent resulting from impervious surfaces at the proposed aboveground facility sites and to the extent that clearing of vegetation reduces evapotranspiration. Increased surface runoff resulting from clearing of the construction right-of-way and reduced evapotranspiration would result in increased recharge to groundwater, thus increasing groundwater storage.

Excavation and subsequent backfilling of the pipeline trench could also alter the quantity and quality of groundwater and groundwater flow paths. Additionally, if soils along the proposed Project route became compacted due to construction and operation of heavy machinery, infiltration and recharge of aquifers along the trench or right-of-way could also be adversely impacted. Altered groundwater flow paths in turn could result in changes to the quality of groundwater at specific locations, such as the shallow Mississippi River Alluvial Aquifer. However, most wells located along the pipeline receive water from deeper formations whose flow paths would not be affected by the trench.

Excavation of the pipeline trench may expose relatively shallow aquifers, such as the Mississippi Alluvial Aquifer, but only to a depth of 6 to 8 feet in most upland and wetland areas. Dewatering of the pipeline trench during construction would be necessary where shallow groundwater is encountered. Dewatering would temporarily depress groundwater levels in the immediate vicinity of the trench. However, because trenching typically proceeds at a relatively rapid rate, the depression of the water table around the trench is expected to recover rapidly once the trench is backfilled. Therefore, dewatering would temporarily affect flow patterns in nearby springs and shallow wells if present, but such impacts would likely be minor and of a brief duration.

Accidental spills and leaks of hazardous materials could impact groundwater resources through the introduction of contaminants, especially in highly permeable areas near water withdrawal wells. Gulf South's Procedures include spill prevention and control measures. Additionally, Gulf South has developed a SPCC Plan, which describes management of the hazardous materials, such as fuels, lubricants, and coolants, that would be used during construction. Given the measures described in Gulf South's Procedures and its implementation of an SPCC Plan, we believe the risk of accidental spills or other introductions of hazardous materials to groundwater would be effectively minimized.

Gulf South indicated that it did not anticipate encountering any contaminated groundwater plumes during construction or operation of the proposed Project. In the event that hazardous materials were discovered during construction of the proposed Project, Gulf South would stop work, notify the appropriate state and federal agencies, and proceed in accordance with all applicable laws and regulations. Additionally, Gulf South would follow the procedures outlined in its *Plan for the Unanticipated Discovery of Contaminated Environmental Media* to ensure that any hazardous materials encountered during construction are properly identified, tested, and disposed of in accordance with the appropriate state and federal regulations.

In order to minimize potential impacts to groundwater, Gulf South would implement the measures identified in its plans, which include:

- Testing and, as applicable, mitigating for compacted soils (see Section 3.2 for additional discussion).
- Installing trench breakers at specified intervals to reduce the potential for the trench to act as a preferential groundwater flow path. Trench breakers would reduce the ability of the trench to convey groundwater. No long-term impacts to the water table or groundwater migration patterns would be anticipated as a result of the proposed Project.

- Implementing measures to reduce impacts resulting from trench dewatering, including discharging the pumped water to well vegetated areas or properly constructed temporary retention structures that would promote infiltration and minimize or eliminate runoff.

- Installing trench plugs to prevent parallel flow in the trenches.

Based on the anticipated impacts to groundwater, Gulf South's stated construction methods, and the measures described in its plans, we believe that construction and operation of the proposed Project would not change regional flow paths, discharge conditions, or groundwater quality because these are determined by larger-scale geologic features that form the hydrogeologic setting, and that aquifers such as the Coastal Lowlands Aquifer and the Mississippi Embayment Aquifer that are typically deeper or that are overlain by other aquifers with separating layers would not be directly affected because their upper margin would be located well below the depth of the pipeline trench.

In order to protect and mitigate potential effects to water withdrawal wells, Gulf South would test the wells of landowners listed in Table 3.3.1.1-1 at the request of the landowner. The scope of any requested pre- or post-construction testing or monitoring would be negotiated on an individual basis with the landowners. However, we recommend that Gulf South offer, and conduct with permission from landowners, individual well testing that evaluates basic parameters such as well yield and water quality. To ensure that water withdrawal well testing and monitoring is performed in a manner that would adequately protect private and public water well resources, **we recommend that:**

- **Gulf South should conduct, with the well-owner's permission, pre- and post-construction well monitoring of well yield and water quality for wells identified in Table 3.3.1.1-1. <u>Prior to construction</u>, Gulf South should file with the Secretary, for review and written approval by the Director of OEP, a well monitoring and mitigation plan that describes standard testing procedures, and the measures that would be taken should a well be impacted such that it is no longer operable or that it becomes impaired. Gulf South should offer this plan to the landowners before construction. Gulf South should also file a report with the Secretary, <u>within 30 days of placing its pipeline facilities in service</u>, identifying all private or domestic water wells or systems damaged by construction and describing how they were repaired. The report should include a discussion of any complaints concerning well yield or quality and how each problem was resolved.**

3.3.1.3 Site-Specific Impacts and Mitigation

Sole-source and principal-source aquifers do not occur in the vicinity of the proposed Project and would therefore not be affected by the proposed construction and operational activities. Additionally, no springs or public wells were identified along the proposed Project route through resource agency consultations or environmental field surveys conducted by Gulf South.

No wellhead protection areas were identified along the proposed pipeline route. Blasting is not anticipated in association with construction of the proposed Project; therefore, impacts to wells and other sensitive resources from blasting are not anticipated. Should the need for blasting arise, Gulf South would follow local and/or state requirements and use accepted safe construction blasting techniques and safeguards.

3.3.1.4 Conclusion Regarding Groundwater Resources

Aquifers typically would not be impacted by the proposed Project given their depth and the relatively shallow nature of construction activity. Impacts to more shallow aquifers and groundwater

resources would be adequately avoided or minimized through Gulf South's implementation of its plans and Procedures, project-specific plans, and our recommendation. Given these measures, we believe that construction and operation of the proposed Project would not significantly affect groundwater resources.

3.3.2 Surface Water Resources

3.3.2.1 Existing Surface Water Resources

Waterbody Crossings

The proposed Project would traverse 308 waterbodies during construction and operation. Specifically, the proposed Project would cross 103 perennial streams, 196 intermittent streams, and 9 ponds. In Mississippi, 292 waterbodies would be crossed, all of which have designated uses of fish and wildlife and recreation. In Alabama, 16 waterbodies would be crossed, all of which have been designated for fish and wildlife use. A table identifying these waterbodies, as well as their widths, locations along the proposed Project route, state waterbody classifications, and proposed crossing methods, is included as Appendix D of this EIS.

As identified in Appendix D, each affected surface waterbody has been assigned a designated use by the respective state management agency responsible for its management which characterizes the best intended uses of that waterbody. Designated uses for waterbodies in Mississippi include fish and wildlife, and recreation (MDEQ, 2004a). Designated waterbody uses in Alabama include outstanding Alabama water, swimming, and fish and wildlife (ADEM, 2006). Designated waterbody uses in Louisiana include fish and wildlife propagation, primary contact recreation, and secondary contact recreation (EPS, 2007).

In Mississippi, 292 waterbodies would be crossed, all of which have designated uses of fish and wildlife and recreation. In Alabama, 16 waterbodies would be crossed, all of which have been designated for fish and wildlife use. In Louisiana, one waterbody, designated for fish and wildlife, as well as primary and secondary contact recreation, may be potentially impacted

Construction and operation of the Delhi, Harrisville, and Destin Compressor Stations may affect four waterbodies (see Appendix D). Since Gulf South has not indicated what measures would be taken to avoid impacts to these waterbodies; **we recommend that:**

- **<u>Prior to construction</u>, Gulf South should file along with its site-specific construction plans for the Delhi, Harrisville, and Destin Compressor Stations a description of the measures that it would take to avoid impacts to waterbodies affected by these facilities.**

Major and Navigable Waters

The major waterbodies (greater than 100 feet wide) and navigable waterbodies, as defined by 33 CFR Part 329, that would be crossed by the proposed Project are listed in Table 3.3.2.1-1.

Sensitive Waterbodies

Sensitive waterbodies include those designated as one or more of the following: having special status by federal or state resource agencies, providing habitats for threatened and endangered species, having potable water intakes within 3 miles downstream of the proposed pipeline crossing, or not attaining specified water quality uses. No streams within the proposed Project are designated as National Wild or Scenic Rivers (NPS, 2004). Based on consultations with the LDEQ, MDEQ, and the ADEM, no

potable surface water intakes are located within 3 miles downstream of any proposed waterbody crossings in Louisiana, Mississippi, and Alabama.

TABLE 3.3.2.1-1
Major and Navigable Waterbodies That Would Be Crossed by the Proposed Southeast Expansion Project

Waterbody	County, State[1]	Begin MP[2]	End MP	Major Waterbody	Navigable Waterbody	Proposed Crossing Method
Pond	Simpson, MS	1.3	1.4	X		In work space only
Leaf River	Smith, MS	44.1	44.2	X	X	HDD
West Tallahala River	Smith, MS	45.3	45.3	X		HDD
Pond	Clarke, MS	87.7	87.8	X		HDD
Chickasawhay River	Clarke, MS	89.3	89.4	X	X	HDD
Bucatunna Creek	Clarke, MS	100.4	100.5		X	HDD
Okatuppa Creek	Choctaw, AL	107.3	107.4		X	HDD

1 MS = Mississippi
AL = Alabama
2 MP = Milepost
N/A = Not Applicable

The Strong River (MP 18.0) and the Chickasawhay River (MP 89.4) are designated by the National Park Service (NPS) as being listed on the NRI. Waterbodies included in the NRI are considered to possess "outstandingly remarkable natural or cultural values judged to be of more than local or regional significance" (NPS, 2006). Gulf South proposes to cross these rivers using HDD to avoid/minimize impacts. In response to our recommendation in the Draft EIS, Gulf South initiated consultation with the NPS (April 30, 2007) regarding impacts and mitigation measures for use of the HDD method, and with the MDWFP (May 22, 2007) regarding its plans/mitigation for withdrawing water from these waterbodies for hydrostatic testing purposes. Gulf South also submitted detailed crossing plans, construction measures, and hydrostatic test water withdrawal plans to the NPS and the MDWFP.

Information for use of the HDD method included a description of the streamside vegetation impacts necessary for laying of the HDD guide wires and the drilling operations and use of bentonite as a drilling mud. In the event of a frac-out, Gulf South would implement its HDD Contingency Plan to avoid or minimize impacts. The proposed HDD entry and exit points for the Strong River would be located approximately 2,150 feet and 750 feet away from the stream edge, respectively. The proposed HDD entry and exit points at the Chickasawhay River crossing location would be located approximately 480 feet and 2,150 feet from the stream edge, respectively. Given the distance between the proposed HDD work areas and both streams' edges, impacts to riparian areas and visual resources would be minimized. Information for withdrawing hydrostatic test water included the quantity of and manner in which hydrostatic test water would be withdrawn and discharged and is discussed in Section 3.3.2.3.

The NPS indicated in a July 2, 2007, conversation with FERC staff that the HDD method being proposed would be acceptable and that these rivers were listed for their values for scenery,

recreation, and fish and wildlife. Furthermore, the NPS considers Gulf South's Procedures sufficient to minimize and mitigate vegetation disturbance along these streams. However, because Gulf South has not yet completed consultations with the NPS regarding potential Project-related effects to designated NRI-listed streams, **we recommend that:**

- **Prior to construction, Gulf South should complete consultation with the NPS regarding its proposed HDD crossings of, and hydrostatic test water withdrawals from, the NRI-listed Strong and Chickasawhay Rivers, and file copies of those consultations with the Secretary. If applicable, Gulf South should also file plans to address any additional mitigation measures recommended by the NPS.**

The proposed Project would cross seven waterbodies that contain threatened or endangered species or critical habitat. Dabbs Creek, Leaf River, West Tallahala River, Chickasawhay River, Bucatunna Creek, and Strong River are designated as critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*). These rivers would be crossed using HDD methods to avoid/minimize potential impacts to the Gulf Sturgeon. The Little Creek is designated as critical habitat for the Natchez Stonefly (*Alloperla natchez*), which would be crossed using the open-cut method. Gulf South consulted with the Mississippi Museum of Natural Science (MMNS) and determined that habitat for this non-listed imperiled species is not likely to be present at this crossing. Additional discussion of endangered, threatened, and special status species and their habitats is provided in Section 3.7.

Waterbodies that do not meet state water quality standards or do not support their designated uses are classified as impaired. Three impaired streams would be crossed by the proposed Project in Mississippi (Table 3.3.2.1-2) (MDEQ, 2004b). These include Tallahala Creek, Campbell Creek, and Dabbs Creek. The proposed Project would not cross any impaired waterbodies in Louisiana or Alabama (LDEQ, 2002; ADEM, 2006). Contaminated sediments are not known to occur along the proposed Project route.

TABLE 3.3.2.1-2
Impaired Waterbodies Crossed by the Proposed Southeast Expansion Project

Waterbody	County, State[1]	Impaired Use	Scenic River	Pollutant Cause	Proposed Crossing Method
Dabbs Creek	Simpson, MS	Aquatic Life Support	No	Biological Impairment	HDD
Campbell Creek	Simpson, MS	Aquatic Life Support	No	Biological Impairment	HDD
Tallahala Creek	Jasper, MS	Aquatic Life Support	No	Biological Impairment	HDD

Sources: ADEM, 2006; LDEQ, 2002; MDEQ, 2004b

1 MS = Mississippi

3.3.2.2 General Impacts and Mitigation

Waterbody crossings would be conducted using either open-cut or HDD methods, as described below and in Section 2.3.2.

As proposed, 224 minor and intermediate waterbody crossings would be conducted using open-cut methods. Twenty-three minor and intermediate waterbody crossings would be conducted using HDDs in tandem with the crossing of larger waterbodies and other significant features. The remaining minor and intermediate waterbodies exist within the culverted waterbody crossings where no proposed changes or impacts to these features are anticipated.

In addition to the 23 minor and intermediate waterbodies, Gulf South proposes to cross all major and navigable waterbody crossings via HDDs, as indicated in Table 3.3.2.1-1.

TABLE 3.3.2.2-1
Waterbodies Crossed Using the HDD Construction Method Along the Proposed Southeast Expansion Project

Waterbody	County, State[1]	Begin MP[2]	End MP
Dabbs Creek	Simpson, MS	12.4	12.4
Unnamed	Simpson, MS	12.6	12.6
Campbell Creek	Simpson, MS	16.1	16.2
Strong River	Simpson, MS	18.0	18.0
Oakohay Creek	Smith, MS	34.1	34.1
Beaver Creek	Smith, MS	34.6	34.6
Leaf River	Smith, MS	44.1	44.2
Unnamed	Smith, MS	44.2	44.3
Tributary to West Tallahala River	Smith, MS	45.3	45.3
West Tallahala River	Smith, MS	45.3	45.3
Tallahoma Creek	Smith, MS	55.8	55.9
Tallahoma Creek	Jasper, MS	55.9	55.9
Tallahala Creek	Jasper, MS	62.5	62.6
Unnamed	Jasper, MS	69.3	69.3
Unnamed	Jasper, MS	69.4	69.4
Unnamed	Jasper, MS	69.6	69.6
Unnamed Pond	Clarke, MS	82.6	82.6
Unnamed Pond	Clarke, MS	82.6	82.7
Shubuta Creek	Clarke, MS	82.7	82.7
Unnamed Pond	Clarke, MS	87.8	87.8
Unnamed	Clarke, MS	87.8	87.8
Unnamed	Clarke, MS	87.9	87.9
Unnamed	Clarke, MS	87.9	87.9

TABLE 3.3.2.2-1
Waterbodies Crossed Using the HDD Construction Method Along the Proposed Southeast Expansion Project

Waterbody	County, State[1]	Begin MP[2]	End MP
Unnamed	Clarke, MS	87.9	87.9
Chickasawhay River	Clarke, MS	89.3	89.4
Unnamed	Clarke, MS	94.9	94.9
Unnamed	Clarke, MS	100.4	100.4
Buctunna Creek	Clarke, MS	100.4	100.5
Okatuppa Creek	Choctaw, AL	107.3	107.4

Gulf South has developed Procedures which are designed to minimize impacts associated with waterbody crossings. These measures include, but are not limited to:

- The requirement to obtain all necessary permits from the COE and state agencies prior to construction and notify applicable state agencies at least 48 hours before commencing instream trenching.
- Using EIs during construction.
- Routing the proposed pipeline as close to perpendicular to the axis of the waterbody as practicable and minimize the number of individual crossings where waterbodies meander or have multiple channels.
- Limiting the use of equipment within the waterbody to that necessary to construct the crossing and using equipment bridges for passage of other construction equipment.
- Placing spoil at least 10 feet from the water's edge, with installation of sediment barriers to prevent the flow of spoil or silt-laden water to the waterbody.
- Completing all instream construction activity, including stabilization and recontouring of banks, within 24 hours for minor waterbody crossings and 48 hours for intermediate waterbody crossings.
- Using temporary erosion and sediment control measures such as sediment barriers and trench plugs.
- Restoring activities, including restoration of pre-construction bank contours, installation of slope breakers, and revegetation of disturbed riparian areas.

Gulf South indicated that it would construct the proposed Project during the period of September 1 through December 31, 2007, pending the Commission's approval of the proposed Project. In the Draft EIS, we recommended that Gulf South should file with the Secretary copies of approvals or concurrences from the MDWFP and the ADCNR indicating that instream construction between December 1 and May 31 is acceptable. On May 30, 2007, Gulf South received approval from the MDWFP to construct the proposed pipeline through waterbodies at any time of the year provided such

activities are performed as outlined in project construction documents. To date, approval from the ADCNR regarding instream construction between December 1 and May 31 is pending, therefore, **we recommend that:**

- **<u>Prior to construction</u>, Gulf South should file with the Secretary copies of approvals or concurrences from the ADCNR indicating that instream construction between December 1 and May 31 is acceptable.**

General impacts to waterbodies, including sensitive waterbodies, potentially resulting from pipeline construction, accidental spills, and construction of aboveground facilities are discussed in more detail below.

Pipeline Construction

Construction of the proposed pipeline through waterbodies using open-cut methods would result in several temporary effects to water quality and instream habitat. The clearing and grading of stream banks, instream trenching, trench dewatering, and backfilling of the instream trench would affect water quality and instream habitat by increasing turbidity, sedimentation, water temperature, modifying aquatic habitat and decreasing dissolved oxygen (DO) levels. The use of heavy equipment or other vehicles in and near surface waterbodies could also introduce chemical contaminants, such as fuels and lubricants, into surface waters or could result in accidental spills during construction.

The extent of the potential impacts resulting from increased sedimentation and turbidity would depend on the amount of material disturbed, the sediment grain size, stream velocity, and channel stability. These factors would determine the amount of suspended sediment and the downstream distance that the suspended sediment is transported. In general, where the streambed consists of fine materials such as sand and silt, as is likely along the proposed Project route, the increase in turbidity and suspended sediments would be relatively greater when compared to locations where the streambed consists of coarser materials such as gravel and cobble. However, stream gradients tend to be relatively low in the area of the proposed Project; thus, stream velocities also would tend to be low, indicating that suspended sediments within these streams would be transported only over short distances.

Increased turbidity can reduce light penetration into the water and thereby reduce photosynthetic activity and levels of DO in the water column. Organic materials suspended in the water can further reduce DO by increasing the biochemical oxygen demand (BOD). Resuspension of sediments also can introduce contaminants, metals, and nutrients bound to the sediments into the water column. However, because there are no known contaminated sediments located along the proposed Project route, adverse effects resulting from resuspension of contaminants would be unlikely.

If contaminated soils were encountered during construction, Gulf South would implement procedures to identify and properly manage the contamination as described in its *Plan for the Unanticipated Discovery of Contaminated Media*.

The removal of vegetation from riparian areas would result in an increase in surface runoff and erosion from the pipeline corridor. However, as specified by its Procedures, the use of temporary and permanent sediment controls (e.g., silt fence and slope breakers) would minimize this impact by directing surface runoff to well-vegetated areas along the sides of the construction right-of-way. Removal of riparian vegetation and the loss of associated shading at waterbody crossings would result in elevated water temperatures. However, potential impacts on water temperature are not expected to be significant in most cases because of the limited amount of streambank canopy that would be cleared relative to the

existing riparian vegetation. Following construction, trees and shrubs would also be allowed to reestablish themselves on waterbody banks, except for a 10-foot-wide corridor centered over the pipeline.

We have identified numerous ponds located adjacent to or immediately downstream of the proposed pipeline construction right-of-way that would be susceptible to siltation if special attention is not given to the use of erosion and sedimentation controls during pipeline construction and restoration of the right-of-way. Therefore, **we recommend that:**

- **Gulf South should prevent sediment and heavily silt-laden water from entering ponds adjacent to areas disturbed by construction activities. Gulf South should conduct the open-cut crossing of the waterbodies feeding these ponds (at the following mileposts: 6.8, 12.5, 15.0, 25.0, 40.9, 41.6, 51.2, 53.4, 59.5, 60.0, 63.5, 65.1, 75.1, 77.1, 86.9, 87.1, 98.6, and 110.0) in a manner that prevents sediment and heavily silt-laden water from entering the ponds.**

Construction Spills

Gulf South has developed several measures regarding spill prevention, containment, and impact minimization in and near waterbodies. These measures include, but are not limited to:

- Structuring overall operations to reduce the risk of accidental spills or exposure of fuels or other hazardous materials into the environment.
- Properly training employees on handling fuels and other hazardous materials, including:
  - Regular inspection of all equipment to ensure it is in good operating order.
  - Storage of hazardous materials and refueling of equipment at least 100 feet from any waterbody or in an upland area at least 100 feet from any wetland.
  - General prohibition of concrete coating activities within 100 feet of a waterbody or wetland.
  - Provisions to have the necessary tools, equipment, and supplies on hand to contain and recover spilled materials at the job site.
  - Prompt reporting of any spills to the appropriate agencies.

In those instances where refueling must be conducted within 100 feet of a waterbody, fueling locations must be preapproved by the EI. Gulf South would store adequate amounts of absorbent pads and keep containment barriers with each construction crew. These measures were identified as part of Gulf South's SPCC Plan, which describes the management of hazardous materials, such as fuels, lubricants, and coolants that would be used during construction.

Aboveground Facilities

Construction of the proposed aboveground facilities would affect one intermittent waterbody and would potentially affect two perennial and two intermittent waterbodies. An intermittent stream located on the Delhi Compressor Station site would be rerouted, therefore directly affected. An intermittent stream on the Harrisville Compressor Station site and another on the Southern Natural M&R Station site would not be crossed. Likewise, two perennial streams on the Destin Compressor Station site would not be crossed. To minimize potential indirect effect to waterbodies at these sites, Gulf South would implement the erosion control measures described in its plans. These measures include using

erosion controls (e.g., slope breakers, silt fencing, and mulch) during construction to control runoff, reducing the time of soil disturbance, and reestablishing contours and vegetative cover as soon as practicable (see Section 3.2.3).

3.3.2.3 Site-Specific Impacts and Mitigation

Sensitive Waterbodies

Gulf South proposes to cross the three impaired waterbodies identified in Table 3.3.2.1-2 using HDD methods. Use of the HDD method to cross these waterbodies would significantly minimize potential impacts to these resources; however, should the HDD method fail or a frac-out occur, Gulf South would implement its HDD Plan as discussed below.

Gulf South indicated that there are no state or locally designated surface water protection areas within Alabama. Additionally, there are no surface water intakes located within 3 miles downstream of the proposed Project waterbody crossings, and no effects to these areas are anticipated. There are no known contaminated sediments in waterbodies that would be crossed by the proposed Project. Therefore, no impacts to such specially-designated areas are anticipated. There are no designated National Wild and Scenic Rivers crossed by the proposed Project. Potential impacts to the Strong River and Chickasawhay River, NRI-listed streams, would be avoided through the use of the HDD method and any additional measures noted in consultation with the NPS.

Horizontal Directional Drill Crossings

Gulf South proposes to use HDDs to install the proposed pipeline across 29 waterbodies, including the major waterbodies and all navigable streams, two NRI-designated streams, and streams containing potential habitat for listed threatened or endangered species (with the exception of Little Creek) as detailed in Appendix D. As described in Section 2.3, HDD is a trenchless crossing method that may be used to avoid direct impacts to sensitive resources, such as waterbodies, by directionally drilling beneath them. A successful HDD would result in little or no impact to the waterbody being crossed.

The feasibility of each proposed HDD would be evaluated based on site-specific geotechnical data collected at each of the proposed HDD sites. The results of these geotechnical analyses would be provided to us for our review prior to construction. In the event of HDD failure, Gulf South could, following its HDD Plan, attempt to re-drill the crossing using a different location or profile, change the drilling procedures, or employ alternate crossing methods such as open-cut. We do not believe that the HDD methods are likely to fail; however, to account for the potential that the planned geotechnical analyses could indicate that an HDD crossing is not feasible or if HDD methods fail, **we recommend that**:

- **Gulf South should not begin an open-cut crossing of any of the waterbodies proposed to be crossed using HDD until it files an amended crossing plan with the Secretary for review and written approval by the Director of OEP. The amended crossing plan should include site-specific drawings identifying all areas that would be disturbed using the proposed alternate crossing method. Gulf South should file the amended crossing plan concurrent with the appropriate state and federal applications required for implementation of the plan.**

Hydrostatic Testing

The withdrawal of large amounts of water for hydrostatic testing of pipeline segments could result in several effects to waterbodies. Specifically, water supply, recreation, and aquatic habitat could be affected by hydrostatic test water withdrawals.

The discharge of hydrostatic test water would contribute to a change in water quality of receiving waters if the source water quality is different than the receiving water, especially during low-flow or drought conditions when there is less water available in the receiving stream for dilution. Refer to Table 3.3.2.3-1 for a summary of hydrostatic test water requirements for the proposed Project.

TABLE 3.3.2.3-1
Hydrostatic Test Water Requirements for the Proposed Southeast Expansion Project

Project Component	Water Source	Withdrawal Location (MP)[5]	Approximate Volume (gallons)	Discharge Location (MP)	Discharge Rate (gal/min)[6]
Pipeline					
	Dabbs Creek[1,2]	12.6	450,000	12.6	1,500
	Campbell Creek[1]	16.1	300,000	16.1	1,500
	Strong River[2,3]	18.0	6,795,000	18.0	3,000
	Oakohay Creek	34.1	300,000	34.1	1,500
	Leaf River [2,4]	44.2	9,857,000	44.2	3,000
	West Tallahala River[2]	N/A (Trucked in)	132,000	45.3	1,500
	Tallahoma Creek	55.9	7,200,000	55.9	3,000
	Tallahala Creek[1]	62.6	110,000	62.6	1,500
	I-59/CR8	N/A (Trucked in)	150,000	69.6	1,500
	Shubuta Creek	82.7	132,000	82.7	1,500
	Chickasawhay River[1,2,3,4]	89.3	15,605,000	89.3	3,000
	Bucatunna River[2,4]	100.4	7,803,000	100.4	3,000
	Okatuppa Creek[4]	107.3	300,000	107.4	1,500
Aboveground Facilities					
Harrisville Compressor Station	Trucked In	N/A	50,000	0.0	1,500
Destin Compressor Station	Trucked In	N/A	50,000	82.9	1,500
Southern Natural M/R Station	Trucked In	N/A	10,000	45.7	1,500
Tennessee Gas M/R Station	Trucked In	N/A	10,000	72.5	1,500

TABLE 3.3.2.3-1
Hydrostatic Test Water Requirements for the Proposed Southeast Expansion Project

Project Component	Water Source	Withdrawal Location (MP)[5]	Approximate Volume (gallons)	Discharge Location (MP)	Discharge Rate (gal/min)[6]
Destin M/R Station	Trucked In	N/A	10,000	82.9	1,500
Transco M/R Station	Trucked In	N/A	10,000	110.8	1,500

* The discharge location would be located at the site of the proposed Delhi Compressor Station, which is 89.5 miles northwest of MP 0.0
1 Impaired (biological) waterbody
2 May contain habitat for threatened and endangered species
3 Listed in National Rivers Inventory
4 COE navigable waterbody
5 MP = Milepost
6 gal/min = gallons/minute
7 N/A = Not Applicable

Gulf South would avoid or adequately minimize potential effects to waterbodies resulting from hydrostatic testing by implementing its Procedures, which include but are not limited to the following measures:

- Obtaining and complying with all applicable water withdrawal permits and special-status stream permits.
- Addressing the operation and fueling of any pumps located within 100 feet of waterbodies or wetlands in the SPCC Plan.
- Maintaining adequate flow rates in all source waterbodies to protect aquatic life and to provide for all downstream uses.
- Screening all hydrostatic test water withdrawal intakes to prevent entrainment of fish and aquatic organisms.
- Regulating the discharge of hydrostatic test waters by using energy dissipation devices to prevent erosion, scour, turbidity, or excessive streamflow.

Additionally, Gulf South indicates that biocides, chemical dewatering agents, and other potentially toxic hydrostatic test water additives would not be used during hydrostatic testing. Gulf South would obtain appropriate NPDES discharge permits prior to conducting hydrostatic testing, would sample all test water according to the permit to determine its suitability, and would implement treatment measures, if needed, prior to discharge. The MDWFP further requested in its May 30, 2007 approval that Gulf South notify prior to withdrawals from streams exhibiting a 7Q10 flow rate for an extended period to protect aquatic resources.

Six waterbodies (Dabbs Creek, Leaf River, West Tallahala River, Chickasawhay River, Bucatunna Creek, and Strong River) are sensitive waterbodies that contain threatened or endangered species or critical habitat, including habitat for Gulf Sturgeon. Site access to these waterbodies for setting up and operating hydrostatic test water withdrawals may require disturbance to their associated riparian and wetland areas. In response to our recommendation in the Draft EIS, Gulf South initiated consultation with the MDWFP (May 22, 2007) regarding its plans/mitigation for withdrawing water from these waterbodies for hydrostatic testing purposes. Gulf South submitted detailed crossing plans, construction measures, and hydrostatic test water withdrawal plans to the MDWFP. Plans submitted included site-

specific drawings, descriptions of how these waterbodies would be accessed, alternative hydrostatic test water sources, and measures that would be employed to minimize impacts to these waterbodies and adjacent riparian and/or wetland resources.

Gulf South states that access to each of these waterbodies would be obtained by using existing pipeline or road rights-of-way to avoid any additional clearing. Gulf South would withdraw and discharge to and from these sensitive waterbodies in compliance with its Procedures as well as other state and local agency requirements, and would include screened intakes to avoid entrainment of fish and energy dissipation devices to reduce erosion and sedimentation. In addition, Gulf South would locate hydrostatic testing equipment outside wetlands and riparian zones wherever possible. Site-specific drawings of the areas to be disturbed by each hydrostatic test water withdrawal were also submitted to the FERC in Gulf South's May 25, 2007, filing. In response to our recommendation in the Draft FEIS, Gulf South has provided site-specific plans for the withdrawal of hydrostatic test water from sensitive waterbodies. Gulf South's use of these plans should help to ensure that potential impacts to these streams and the habitats for rare species they support are adequately minimized. Based on Gulf South's proposed measures, compliance with its Procedures, and our requirement to address any additional mitigation measures that may result from continuing agency consultations, we believe that impacts to waterbodies resulting from hydrostatic testing would be adequately minimized.

Given compliance with its Procedures, Gulf South's proposed measures and Procedures, and our requirement to address any additional mitigation measures that may result from continuing agency consultations, we believe that impacts to waterbodies resulting from hydrostatic testing would be adequately minimized.

3.3.3 Conclusion Regarding Surface Water Resources

The proposed Project would cross numerous waterbodies, but potential impacts to these waterbodies would be minimized or mitigated through the implementation of Gulf South's Procedures. Most minor and intermediate streams would be crossed using the open-cut method, but they would be crossed in less than 48 hours and restored and stabilized rapidly. Major or sensitive waterbodies and all designated NRI and navigable waterbodies, would be crossed by HDD and impacts to them would be avoided. In the event of HDD frac-out, Gulf South would implement its HDD Plan. Given the measures described above and our recommendations, we believe that construction and operation of the proposed Project would not significantly affect surface water resources.

3.4 WETLANDS

Wetlands are areas that are inundated or saturated with surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (Environmental Laboratory, 1987). Wetlands perform a number of valuable functions, including flood flow attenuation, surface water management, filtration of non-point source pollutants and compounds, sediment and nutrient retention, and providing wildlife habitat, groundwater recharge and discharge, recreation, and erosion control.

Section 404 of the CWA of 1972 established standards to minimize impacts to wetlands under the regulatory jurisdiction of the COE. These standards require avoidance of wetlands where possible, and minimization and compensation for disturbance where impacts are unavoidable, to the degree practical.

3.4.1 Existing Wetland Resources

Gulf South conducted field investigations to identify, characterize, and survey the boundaries of wetland resources along the pipeline construction right-of-way and the areas identified for ancillary facilities.

Using the Cowardin, et al. (1979) wetland classification system, Gulf South identified four wetland types within the proposed Project area:

- Palustrine forested (PFO)
- Palustrine scrub-shrub (PSS)
- Palustrine emergent (PEM)
- Palustrine Open Water (POW)

Palustrine Forested Wetlands

PFO wetlands are dominated by woody vegetation, including bottomland hardwoods, that is at least 20 feet tall (Cowardin, et al., 1979). These wetlands provide a diverse assemblage of vegetation and an abundance of food and cover for wildlife. A significant portion of the PFO wetlands found along the proposed route consist of regrowth hardwoods of various ages. Some PFO wetlands also contain mature bald cypress (*Taxodium distichum*) or water tupelo (*Nyssa aquatica*). Common vegetative species typically found in PFO wetlands observed within the proposed Project construction right-of-way include water oak (*Quercus nigra*), swamp chestnut oak (*Quercus michauxii*), willow oak (*Quercus phellos*), black willow (*Salix nigra*), water tupelo, bald cypress, American sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), tulip tree (*Liriodendron tulipifera*), river birch (*Betula nigra*), sweetbay magnolia (*Magnolia virginiana*), persimmon (*Diospyros virginiana*), poison ivy (*Toxicodendron radicans*), and buttonbush (*Cephalanthus occidentalis*).

Palustrine Scrub-Shrub Wetlands

PSS wetlands include all wetlands dominated by woody vegetation less than 20 feet tall (Cowardin, et al., 1979). PSS wetlands are typically not as structurally diverse as forested wetlands due to the lack of trees comprising the canopy. As with PFO wetlands, PSS wetlands supply an abundance of food and cover for wildlife. Common vegetative species found in the PSS wetlands observed within the proposed Project construction right-of-way include various bulrushes (*Scirpus* spp.), wool-grass (*Scirpus cyperinus*), buttonbush, wax myrtle (*Myrica cerifera)*, baccharis (*Baccharis halimifolia*), swamp cyrilla (*Cyrilla racemiflora*), and sweet leaf (*Symplocos tinctoria*).

Palustrine Emergent Wetlands

PEM wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin, et al., 1979). Wildlife typically use these areas for nesting and feeding during migratory periods. Common vegetative species found in the PEM wetlands traversed by the proposed Project construction right-of-way include needlerush (*Juncus roemerianus*), lizard's-tail (*Saururus cernuus*), narrow-leaved cattail (*Typha angustifolia*), and southern wild rice (*Zizaniopsis miliacea*). Persistent species found in palustrine systems include cattails (*Typha* spp.), bulrushes, beakrushes (*Rhynchospora* spp.), saw grass (*Cladium jamaicense*), sedges (*Carex* spp.), common reed (*Phragmites*

australis), and goldenrod (*Solidago* spp.). There are also a variety of broad-leaved persistent emergent species, such as dock (*Rumex mexicanus*), waterwouldow (*Decodon verticillatus*), and smartweeds (*Polygonum* spp.). Non-persistent species found in emergent wetlands include sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*), arrow arum (*Peltandra virginica*), pickerelweed (*Pontederia cordata*), and arrowheads (*Sagittaria* spp.).

Palustrine Open Water Wetlands

POW wetlands are characterized by areas of open water less than 6.6 feet deep. There are often submerged or floating-leaved plants in the shallower portions along the edges of the waterbody (abbreviated OW). Common vegetative species found in the POW wetlands traversed by the proposed Project construction right-of-way include sedge (*Carex* sp.), goldenrod (*Solidago* sp.), giant reed grass (*Phragmites australis*), and soft rush (*Juncus effusus*).

The location, wetland classification, crossing length, and affected acreage for each wetland that would be affected by construction and operation of the proposed Project is listed in Appendix E. A summary of the wetlands affected by the proposed Project is provided in Table 3.4.1-1.

High-Quality, Sensitive, or Special-Status Wetlands

PFO wetlands containing significant tupelo and bald cypress trees occur along the proposed route and may be considered a component of a relatively higher-quality forested wetland system, especially when the specimens are mature and large. Gulf South did not identify lands in the NRCS Wetland Reserve Program (WRP) or the associated Prior Converted Wetlands Program along the proposed route.

TABLE 3.4.1-1
Summary of Wetlands Affected by the Proposed Southeast Expansion Project

Location[1]	Wetland Type[2]	Number of Wetland Crossings	Permanent Operation Impacts (acres)[3,4,5]	Temporary Construction Impacts (acres)[5]	Estimated Crossing Length (miles)
			Pipeline		
Simpson County, MS					
	PEM	9	0	0.28	0.11
	PFO	24	4.43	10.75	1.55
	PSS	8	0	7.75	0.92
	PFO/PEM/PSS	1	0.12	0.24	0.19
Smith County, MS					
	PEM	2	0	0.94	0.21
	PFO	12	4.41	10.03	1.29
	PSS	8	0	0.71	0.27
	PEM/PFO	1	0.07	0.18	0.03
Jasper County, MS					
	PEM	5	0	2.07	0.30
	PFO	14	4.87	11.25	1.59
	PSS	3	0	5.99	0.69
Clarke County, MS					
	PEM	15	0	1.20	0.29
	PFO	16	2.41	5.93	1.84
	PSS	10	0	7.16	0.92

TABLE 3.4.1-1
Summary of Wetlands Affected by the Proposed Southeast Expansion Project

Location[1]	Wetland Type[2]	Number of Wetland Crossings	Permanent Operation Impacts (acres)[3,4,5]	Temporary Construction Impacts (acres)[5]	Estimated Crossing Length (miles)
	PEM/PFO	2	0.52	1.27	0.20
	PEM/POW	1	0	0.15	0.01
Choctaw County, AL					
	PEM	4	0	0.56	0.15
	PFO	1	0.26	0.67	0.03
	PSS	5	0	1.04	0.29
	PEM/PSS	1	0	0.22	0.03
	PEM/PFO	3	0.23	0.55	0.17
	Subtotal Impacts:	**145**	**17.32**	**68.94**	**11.08**
		Aboveground Facilities			
	PEM	0	0	0	N/A
	PFO	0	0	0	N/A
	PSS	0	0	0	N/A
	Subtotal Impacts:	**0**	**0**	**0**	**N/A**
		Access Roads and ATWSs			
	PEM	N/A	0	0	N/A
	PFO	N/A	0	0	N/A
	PSS	N/A	0	0	N/A
	PEM/PFO	N/A	0	0	N/A
	Subtotal Impacts:	**N/A**	**0**	**0**	**N/A**
	Total Impacts:	**145**	**17.32**	**68.94**	**11.08**

1 MS = Mississippi
AL = Alabama
2 Wetland Type
PEM = Palustrine emergent
PFO = Palustrine forested
PSS = Palustrine scrub-shrub
POW = Palustrine open water
3 Impact calculations are based on an operationally maintained 30-foot-wide corridor through wetlands.
4 Permanently maintained forested wetland impacts would result only in a conversion to either PSS or PEM wetlands. PEM and PSS wetlands would be allowed to completely revegetate to pre-construction conditions and would result in no conversion or loss of function.
5 Permanent maintenance impacts and temporary construction impacts are avoided in wetlands crossed by HDD construction methods. Temporary construction impacts are based on a 75-foot-wide corridor through wetlands.

3.4.2 General Wetland Impacts

The Louisiana portion of the Project does not impact any wetlands. The majority of the 145 wetlands that would be affected by the proposed Project are located in Mississippi (approximately 90 percent of the total number), with the remainder occurring in Alabama. As shown in Table 3.4.1-1, construction of the proposed Project would result in a total of approximately 68.94 acres of wetland disturbance during construction. These impacts would include approximately 38.01 acres of PFO wetlands, 2.91 acres of mixed-type wetlands that include a PFO component, and an additional 28.02 acres of PSS, PEM, and POW wetlands. The majority of the acreage of forested wetlands affected by this Project is associated with riparian zones.

Construction and operation of the proposed pipeline would result in both short- and long-term effects to wetlands. In the short-term, construction activities, including clearing, trenching, spoil placement, vehicle traffic, and related construction disturbances, would diminish the recreational and aesthetic value of wetlands. Wetland functions, such as erosion control, buffering and flood flow attenuation, sediment retention, and nutrient retention, would also be affected by construction activities. Construction activities would also result in both short- and long-term loss of wildlife habitat and the reduction of habitat quality.

Effects to wetlands would vary depending on wetland type. Due to the relatively long period required for PFO wetlands to regenerate—up to 30 years or more—impacts to these wetland types would be long-term. Impacts to PSS wetlands would be mostly short-term, as regeneration would likely occur within two to four years. PEM and POW wetlands, which can regenerate more rapidly, would be typically affected only temporarily as they may become reestablished in one or two growing seasons.

During operation of the proposed Project, Gulf South's Procedures allow for annual maintenance of a 10-foot-wide strip centered over the pipeline. Additionally, trees that are within 15 feet of the pipeline and greater than 15 feet in height may be cut and removed. These activities would not affect PEM or POW wetlands as these herbaceous areas would not typically be maintained or mowed. However, mowing, clearing, and tree removal would affect PSS and PFO wetlands along the permanent right-of-way. Functions associated with these wetland types would be altered as PFO or PSS wetlands within the maintained portion of the permanent pipeline right-of-way would be permanently converted to an herbaceous state. However, the overall acreage of wetlands would not be significantly reduced.

3.4.2.1 General Wetland Construction and Mitigation Procedures

Wetlands affected by the proposed Project are identified in a table in Appendix E. Location by milepost, classification, crossing widths, acres of temporary and permanent impacts, and crossing methods are included in the table.

Section 2.3.2 describes the specialized pipeline construction procedures that Gulf South would implement to minimize impacts to wetlands. Within the construction right-of-way, Gulf South would leave existing root systems intact where possible, would install erosion control devices to minimize sediment flow into the wetland, and would use special seed mixes during restoration. Gulf South proposes to maintain annually a 30-foot-wide herbaceous right-of-way in wetlands.

Gulf South would use the minimum construction equipment necessary within wetlands for clearing, trench excavation, pipe fabrication and installation, trench backfilling, and restoration activities. If standing water or saturated soil conditions were present or if construction equipment caused ruts or mixing of the topsoil and subsoil, construction equipment operating in wetland areas would be further limited to the use of low ground pressure equipment or normal equipment operating from timber riprap or prefabricated equipment mats. Gulf South would also minimize impacts to wetlands by implementing the measures identified in its Procedures. These measures include, but are not limited to:

- Clear marking of wetland boundaries and buffers in the field until construction is complete.
- Limitation of tree stump removal and grading to the area directly over the pipeline, unless it is determined that safety-related construction constraints required grading or removal of tree stumps from under the working side of the construction right-of-way.
- Stripping of topsoil from the area directly over the trench line to a maximum depth of 12 inches in unsaturated soils.

- Minimization of the amount of time that topsoil is segregated and the trench is open.
- Use of sediment barriers to prevent sediment flow into a wetland.
- Dewatering of trenches in a way that does not cause sedimentation in a wetland.
- Use of trench breakers to ensure maintenance of the original wetland hydrology.
- Prohibition of the storage of hazardous materials and refueling within 100 feet of a wetland.
- Restoration of pre-construction contours, vegetative restoration, and monitoring.

In addition to these measures, the COE requires that all appropriate and practicable actions be taken to avoid or minimize those impacts, pursuant to its Section 404(b)(1) guidelines, which restrict discharges of dredged or fill material where a less environmentally damaging and practicable alternative exists. All proposed wetland crossings would be subject to review by the COE to ensure that wetland impacts are fully identified and that appropriate wetland restoration and mitigation measures are implemented. Gulf South would also comply with all conditions of the Section 404 authorizations that may be issued by the COE. See Section 3.4.4 for additional discussion of compensatory mitigation requirements.

3.4.2.2 Alternative Measures to Our Procedures

Gulf South has proposed as part of its Procedures, 50 site-specific alternative measures from Section V.B.2 (location of ATWSs near waterbodies) and VI.B.1 (location of ATWSs in wetlands) of our Procedures. Section V.B.2 of our Procedures states that all ATWSs, such as those used for staging and storing additional spoil, should be located at least 50 feet from the water's edge, except where the adjacent upland consists of actual cultivated or rotated cropland or other disturbed land. Section VI.B.1 of our Procedures states that access roads and ATWSs, such as those used for staging or storing additional spoil, should be located at least 50 feet outside of identified wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. Table 3.4.2.2-1 lists the locations and justifications associated with these proposed alternative measures to our Procedures.

TABLE 3.4.2.2-1
Proposed Site-Specific Alternative Measures to FERC's Procedures for the Proposed Southeast Expansion Project

Milepost	Affected Wetland Area (acres)	Applicable FERC Procedures Section	Justification for Alternative Measure
1.7	0.0[b]	VI.B.1.a	ATWS needed for wetland and stream excavation
5.5	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation
6.8	0.0[a]	VI.B.1.a	ATWS needed for side hill slope
10.2	0.23	VI.B.1.a	ATWS needed for road bore
10.2	0.23	VI.B.1.a	ATWS needed for road bore
10.3	0.23	VI.B.1.a	Stream in wetland & ATWS needed for bank excavation
10.3	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation
12.8	0.0[b]	VI.B.1.a	HDD entry/exit next to wetland & ATWS needed for HDD
13.0	0.32	VI.B.1.a	Foreign Pipeline in wetland & ATWS needed for excavation
14.6	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation
15.6	0.0[b]	VI.B.1.a	ATWS needed near wetland for excavation

TABLE 3.4.2.2-1
Proposed Site-Specific Alternative Measures to FERC's Procedures for the Proposed Southeast Expansion Project

Milepost	Affected Wetland Area (acres)	Applicable FERC Procedures Section	Justification for Alternative Measure
15.8	0.55	VI.B.1.a	HDD entry/exit in wetland & ATWS needed for HDD
17.5	0.0[b]	VI.B.1.a	ATWS needed for road bore
18.3	0.0[b]	VI.B.1.a	HDD entry/exit next to wetland & ATWS needed for HDD
19.5	0.0[b]	VI.B.1.a	Foreign Pipeline in wetland & ATWS needed for excavation
23.6	0.0[a]	V.B.2.a	ATWS needed for road bore
25.8	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation
34.7	0.8	VI.B.1.a	HDD entry/exit in wetland & ATWS needed for HDD
39.8	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation
45.2	0.0[b]	VI.B.1.a	HDD entry/exit in wetland & ATWS needed for HDD
51.8	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation and railroad bore
51.9	0.25	VI.B.1.a	ATWS needed for railroad bore
55.9	0.35	VI.B.1.a	HDD entry/exit in wetland & ATWS needed for HDD
56.2	0.58	VI.B.1.a	HDD entry/exit in wetland & ATWS needed for HDD
59.8	0.02	VI.B.1.a	ATWS needed for road bore
60.6	0.22	VI.B.1.a	Stream in wetland & ATWS needed for bank excavation
65.9	0.46	VI.B.1.a	Ditch in wetland & ATWS needed for bank excavation
66.4	0.6	VI.B.1.a	Road in wetland & ATWS needed for road bore
66.9	0.46	VI.B.1.a	Stream in wetland & ATWS needed for bank excavation
68.7	0.0[a]	V.B.2.a	ATWS needed for road bore
69.6	0.0[a]	V.B.2.a	HDD entry/exit near stream & ATWS needed for HDD
70.5	0.14	VI.B.1.a	ATWS needed for road bore
70.6	0.21	VI.B.1.a	ATWS needed for road bore
78.3	0.0[c]	V.B.2.a	ATWS needed for foreign pipeline crossing and side hill slope
80.3	0.0[a]	V.B.2.a	ATWS needed for road bore
82.2	0.01	VI.B.1.a	ATWS needed for foreign pipeline crossing and side hill slope
82.4	0.0[c]	V.B.2.a	HDD entry/exit near stream & ATWS needed for HDD
83.0	1.19	VI.B.1.a	ATWS needed for meter and compressor station construction
83.3	0.01	VI.B.1.a	ATWS needed for road bore
89.0	0.28	VI.B.1.a	HDD entry/exit in wetland & ATWS needed for HDD
93.4	0.0[b]	VI.B.1.a	ATWS needed for road bore
95.1	0.0[c]	V.B.2.a	HDD entry/exit near stream & ATWS needed for HDD
99.9	0.24	VI.B.1.a	Road in wetland & ATWS needed for road bore
100.2	0.54	VI.B.1.a	HDD entry/exit near stream & ATWS needed for HDD
101.2	0.0[a]	V.B.2.a	ATWS needed for stream bank excavation
102.9	0.14	VI.B.1.a	Road next to wetland & ATWS needed for road bore
104.8	0.0[b]	VI.B.1.a	ATWS needed for side hill slope
104.9	0.0[b]	VI.B.1.a	ATWS needed for side hill slope
106.6	0.0[b]	VI.B.1.a	ATWS needed for side hill slope
110.8	0.77	VI.B.1.a	ATWS needed for meter and compressor station construction

Notes:
a - No ATWS within stream but is less than 50' from stream
b – No ATWS within wetland but is less than 50' from wetland
c – Small intermittent stream within ATWS

Based on our review, we have determined that the proposed alternative measures as described in Table 3.4.2.2-1 appear reasonable and are adequately justified. Gulf South has provided preliminary site-specific drawings for the proposed ATWSs in wetlands. In accordance with its Procedures, Gulf South would be required to file these site-specific construction plans prior to the start of construction.

3.4.3 Site-Specific Impacts and Mitigation

3.4.3.1 High-Quality, Sensitive, or Special-Status Wetlands

Gulf South indicates that old-growth tupelo trees occur within the proposed Project right-of-way at or adjacent to three wetland locations as listed in Table 3.4.3.1-1: Wetlands W1CSI004 at MP 12.7-12.8; W1BJS004 at MP 62.1-62.2; and W9DCK001 at MP 101.1-101.2. No wetlands were identified as containing mature cypress trees. To minimize impacts to tupelo and/or cypress trees, Gulf South would avoid clearing mature tupelo and/or cypress trees that are greater than or equal to 24 inches in diameter at breast height (dbh) within buffer zones comprised of the outermost 10 feet of the spoil side of the Project's construction ROW. Mature trees in this buffer zone would not be cut, rather they would be avoided and spoil would be placed around them where feasible and where its usage would not negatively impact safe construction and operation.

As recommended in the Draft EIS, Gulf South re-surveyed these areas for trees larger than 24 inches dbh and developed site-specific crossing plans including measures to minimize impacts to these mature trees. Approximately 27 mature trees were found to be outside the proposed construction right-of-way limits by 9 to 200 feet, one was found to be within five feet of these limits, and two were found to be within 10 feet of the centerline. Gulf South indicated that it could not avoid these two trees for safety reasons. Given that most identifiable mature trees are outside of Gulf South's construction work limits, and its proposed use of a buffer zone to protect a portion of the mature trees located within or adjacent to these wetlands, we believe that with the implementation of Gulf South's proposed mitigation plan, impacts to mature tupelo and cypress trees would be minimized.

TABLE 3.4.3.1-1
Forested Riparian Zones along the Proposed Southeast Expansion Project

Milepost	Approximate Distance Crossed (feet)
12.7 to 12.8	1,003
62.1 to 62.2	211
101.1 to 101.2	1,478

3.4.4 Wetland Restoration and Compensatory Mitigation

The requirements for wetland restoration measures identified in Gulf South's Procedures include:

- Consultation with appropriate land management or state agencies to develop a Project-specific restoration plan that includes measures for reestablishing herbaceous and woody species.

- Prohibition on the use of herbicides or pesticides within 100 feet of a wetland, except as allowed by the appropriate agencies.

- Monitoring of the success of wetland revegetation annually for the first three years after construction or until wetland revegetation is considered successful.

As noted above, Gulf South would complete wetland permitting, including development of measures for compensatory mitigation for all wetland impacts in consultation with the COE Mobile District. Based on the results of the consultations completed to date, Gulf South proposes to compensate for wetland impacts through purchase of wetland mitigation bank credits. Mitigation banking is an approved alternative to on-site mitigation and often provides for greater likelihood of success in replacement of wetland function and long-term management of restored wetland areas.

3.4.5 Conclusion Regarding Impacts to Wetlands

The proposed Project would impact a number of wetlands resulting in short- and long-term impacts to wetlands. However, wetland impacts would be minimized by the collocation of the proposed pipeline with existing rights-of-way, the use of HDDs, and the implementation of Gulf South's Procedures. Given the measures identified in Gulf South's Procedures and its adherence to COE permitting requirements, we believe that impacts to wetlands would be adequately minimized and mitigated.

3.5 VEGETATION

3.5.1 Existing Vegetation Resources

Construction and operation of the proposed Project would affect five general upland vegetative communities: upland forest, pine plantation, open land (scrub-shrub), agriculture, and pasture. In addition to the upland vegetation types, the proposed Project would cross PFO wetlands, PSS wetlands, PEM wetlands, and POW wetlands, which are discussed in detail in Section 3.4.

The upland vegetative communities and representative species crossed by the proposed Project are described in Table 3.5.1-1.

TABLE 3.5.1-1
Upland Vegetation Communities Occurring Along the Proposed Southeast Expansion Project

Vegetation Community	General Description	Common Species
Upland Forest	Includes slope hardwood and mixed hardwood-loblolly pine. In mixed hardwood-loblolly pine (*Pinus taeda)* forests, loblolly pine comprises at least 20 percent of the overstory. These forests trend toward hardwood dominance when fire is suppressed.	Drier locations – loblolly pine (*Pinus taeda*), shortleaf pine (*Pinus echinata*), southern red oak (*Quercus falcata*), red maple (*Acer rubrum*), cherrybark oak (*Quercus pagoda*), mockernut hickory (*Carya tormentosa*), winged elm (*Ulmus alata*), black gum (*Nyssa sylvatica*), white oak (*Quercus alba*). Wetter locations – laurel oak (*Quercus laurifolia*), southern magnolia (*Magnolia grandiflora*), water oak (*Quercus nigra*), blue beech (*Carpinus caroliniana*), eastern hop hornbeam (*Ostrya virginiana*), sweetgum (*Liquidambar styraciflua*). Understory in fire-suppressed areas – sassafras (*Sassafras albidum*), Japanese honeysuckle (*Lonicera*

TABLE 3.5.1-1
Upland Vegetation Communities Occurring Along the Proposed Southeast Expansion Project

Vegetation Community	General Description	Common Species
		japonica), Sebastian bush (*Sebastiania fruticosa*), gallberry (*Ilex glabra*), hawthorn (*Crataegus* spp.), sweet leaf (*Symplocos tinctoria*), swamp cyrilla (*Cyrilla racemiflora*), yaupon (*Ilex vomitoria*), American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), wax myrtle (*Myrica cerifera*), poison ivy (*Toxicodendron radicans*), green briar (*Smilax* spp.), blackberry (*Rubus* spp.), Carolina jasmine (*Gelsemium sempervirens*). Understory in fire-maintained areas – panicum (*Panicum* spp.), broomsedge (*Andropogon* spp.), three-awn (*Aristida* spp.).
Pine Plantation	Pine plantations are primarily managed for pulp and poles, with an average rotation time of 20 to 30 years.	Loblolly pine. Associated sedges (*Carex* spp.), blackberry, yaupon, greenbriar, and Carolina jasmine.
Open Land (scrub/shrub)	Includes clear-cut areas that have not been replanted and are overgrown, and maintained rights-of-way.	Sapling stage of woody vegetation in upland forest, greenbriar, blackberry, peppervine (*Ampelopsis arborea*), holly (*Ilex* spp.).
Agriculture	Areas under active farming, including field crops.	Wheat (*Triticum aestivum*) and hay.
Pasture	Improved or unimproved areas dominated by grasses and used by livestock for grazing.	Bermuda grass (*Cynodon dactylon*), crabgrass (*Digitaria* spp.), broomsedge, bluegrass (*Poa* spp.), Bahia grass (*Paspalum notatum*).

Pipeline Facilities

Relatively large areas of upland forest, pine plantation, and open land vegetation, and to a lesser extent, agriculture and pasture vegetation, would be affected by construction of the proposed pipeline and associated ATWSs. Approximately 591.8 of the 1,580.3 acres (37 percent) that would be contained within the pipeline construction right-of-way and ATWSs consist of upland forest. Pine plantation (560.6 acres, 35 percent), open land (170.3 acres, 11 percent), pasture (56.3 acres, 4 percent), and agriculture (10.4 acres, 1 percent) account for most of the remaining areas that would be crossed (see Table 3.5.1-2) by the proposed Project.

Aboveground Facilities

The proposed aboveground facilities include three new compressor stations, five M/R stations, one side valve, and eight MLVs. Agriculture, upland forest, and pine plantation are the existing vegetation cover types at the proposed Delhi, Harrisville, and Destin Compressor Station sites, respectively (see Table 3.5.1-2). The CenterPoint M/R Station would be located within the Delhi Compressor Station site, and the Destin M/R Station would be located within the Destin Compressor Station site. The remaining proposed M/R station sites occur within the upland forest and open land vegetation types. MLV sites would impact an additional 0.5 acre of land currently classified as upland forest and open land. The remaining acreages impacted by MLV sites would all be located within the boundaries of the permanent right-of-way for the proposed pipeline facilities.

Access Roads

Gulf South proposes to use 138 access roads, 47 of which would be new and/or upgraded roads and 91 would be existing roads to be used without modification. Approximately 98 percent of the 58.3 acres encompassing new or modified access roads would be within the other/roads category areas where vegetation is lacking. The remainder of the vegetation types affected by access roads would be comprised of upland forest and open land (see Table 3.5.1-2).

Pipe Storage and Contractor Yards

Gulf South indicated that the pipe storage and contractor yards would be located in existing commercial and industrial areas, thereby avoiding impacts to vegetation associated with those construction-related activities.

3.5.1.1 Vegetative Communities of Special Concern or Value

Based on a review of maps, field surveys, available information, and consultations with the resource agencies, only Conservation Reserve Program (CRP) lands were identified as lands containing vegetative communities of special concern or value. As described further in Section 3.8, the Farm Service Agency (FSA) administers the CRP, which is a voluntary program that allows owners of agricultural tracts to conserve environmentally sensitive lands with financial assistance from the federal government (USDA, 2006). Through the planting of native grasses, trees, and other cover, these easements are designed to reduce soil erosion, reduce sedimentation, improve water quality, and establish and improve aquatic and wildlife habitat. Vegetation found in these easements performs a critical role in providing these ecological values.

TABLE 3.5.1-2
Vegetative Communities Affected by the Proposed Southeast Expansion Project

Vegetation Cover Type	Pipeline Facilities[a]		Aboveground Facilities		Access Roads	
	Temporary Construction Impact (acres)	Permanent Operations Impact (acres)	Temporary Construction Impact (acres)	Permanent Operations Impact (acres)	Temporary Construction Impact (acres)	Permanent Operations Impact (acres)
Upland Forest	591.8	301.2	54.4	34.9	0.4	--
Pine Plantation[b]	560.6	271.7	18.2	11.7	--	--
Open Land[c] (scrub-shrub)	170.3	95.4	3.9	3.2	0.8	--
Agriculture	10.4	5.7	69.5	69.5	--	--
Pasture	56.3	31	--	--	--	--
Total	**1,389.4**	**705**	**146**	**119.3**	**1.2**	**0.0**

Notes:
a Acreages based on pipeline, pipe storage and contractor yards, and ATWSs. Acreages reflect a nominal 100-foot-wide construction right-of-way. Permanent impacts are based on Gulf South's 60-foot wide permanent right-of-way; however, we are recommending that Gulf South's permanent right-of-way be limited to a width of 50 feet.
b Includes actively planted and harvested pine plantation forests.
c Includes areas that have been clear-cut without replanting and maintained rights-of-way.

The MNHP identified the wooded seep, spring seep, and wet terrace habitat types as potentially occurring within the Project area. However, none of these habitat types were observed during field surveys conducted by Gulf South.

3.5.1.2 Extensive Forested Tracts

Based on a review of maps, aerial photographs, and field surveys, several areas of large, relatively non-fragmented forested tracts would be crossed by the proposed pipeline. Although these areas are relatively non-fragmented, Gulf South indicated that many of these tracts are subject to periodic harvest and/or thinning. The location of these tracts and the length of the associated crossings are identified in Appendix F.

3.5.2 General Impacts and Mitigation

The primary impacts of the proposed Project on the identified vegetative communities would arise from the removal of vegetation along the proposed pipeline route and at aboveground facility sites during construction and routine maintenance. Cutting or removal of vegetation for Project construction could lead to increased soil erosion, associated sedimentation and turbidity in streams and wetlands, an increase in invasive or exotic plant species, and a reduction in wildlife habitat. Clearing and construction activities along the proposed pipeline right-of-way and associated facilities could also result in soil compaction. Additionally, heavy machinery could damage riparian vegetation associated with waterbodies, whether the equipment is moving or parked for extended periods, thereby potentially reducing water quality in adjacent streams. All areas disturbed during construction, but not needed permanently as part of the pipeline or aboveground facilities or permanent access roads, would be allowed to revert to pre-construction vegetative conditions.

In those areas where an HDD would be used to cross special features such as waterbodies, wetlands, and roads, Gulf South proposes to use hand-laid electric-grid guide wires to assist guidance of the drill bit along the proposed route. A small pathway approximately 2- to 3-feet-wide may be cut, using hand tools in heavily vegetated areas, in order to position these guide wires. This activity would result in minimal disturbance to vegetation along the path of the HDD, and no large trees would be cut as part of this process.

The proposed 60-foot wide permanent right-of-way would be mowed or otherwise maintained every three years and a 10-foot-wide corridor over the pipeline centerline would be maintained annually in an herbaceous state; however, we are recommending in Section 2.0 that Gulf South should limit the width of its right-of-way to 50 feet.

Periodic maintenance of the permanent pipeline right-of-way would prevent the regrowth of forested vegetative communities and would result in regular disturbance of vegetation. Construction of the aboveground facility sites would result in permanent conversion of some vegetated areas to a non-vegetated industrial/commercial use, either as standing structures or associated facilities such as parking and storage areas.

The severity of the impacts described above would depend on the type of vegetation impacted, the size of the area cleared, and the time required for vegetation to become re-established. General impacts to vegetation communities are described in further detail below.

The cutting or removal of vegetation could increase soil erosion potential, increase sedimentation and turbidity in streams and wetlands, increase invasive or exotic plant species, and reduce wildlife habitat. Additionally, heavy machinery could damage vegetation associated with waterbodies, whether the equipment is moving or parked for extended periods. Impacts to forested areas, including pine plantations, mixed hardwood-loblolly pine forests, and sloped hardwood forests, resulting from construction and operation of the proposed Project, would include a change in vegetative strata, a change

in appearance, conversion of community type, and loss of habitat. Several of these impacts would be long-term as regrowth to pre-construction condition would take 30 years or more.

Periodic maintenance of the 60-foot-wide, permanent pipeline right-of-way would prevent restoration of forested habitat as the area would be mowed or otherwise maintained every three years, and a 10-foot corridor over the pipeline centerline would be maintained annually in an herbaceous state. Clearing and construction activities along the pipeline right-of-way would also result in soil compaction and damage to the trunks, branches, or roots of adjacent trees left standing, thereby reducing their overall health and long-term survival. However, Gulf South has committed to implementing the measures identified in its plans, which include measures for testing and mitigating soil compaction.

Permanent impacts would also occur at the proposed aboveground facility sites. Notably, permanent impacts to forested areas and/or pine plantations would occur at two of the three proposed compressor station sites and at three of the five proposed M/R stations. Permanent impacts to agricultural land and open land would also occur in association with construction of the Delhi and Harrisville Compressor Stations, and the CenterPoint and Transco M/R Stations.

To minimize Project-related effects on vegetative communities, Gulf South would implement its plans, which identify baseline mitigation measures for minimizing erosion and enhancing revegetation in upland areas. Implementation of Gulf South's plans would aid vegetative restoration and prevent or minimize sedimentation and turbidity in streams and wetlands. Restoration and best management practices identified in Gulf South's plans include the following:

- Use of at least one EI per construction spread, who would ensure compliance with the plans, Procedures, and other required conditions.
- Segregation of topsoil.
- Installation of temporary erosion control measures such as slope breakers, sediment barriers, and mulch.
- Commencement of cleanup immediately after backfilling, and completion of restoration within 20 days.
- Installation of permanent erosion control devices, such as trench breakers and slope breakers.
- Testing and mitigation for soil compaction.
- Revegetation in accordance with the recommendations of the local soil conservation authority, other land management agencies, or the affected landowner.
- Provision of barriers to control off-road vehicle activities.
- Post-construction monitoring and maintenance of revegetated areas.

Furthermore, Gulf South's Plan requires that all upland areas disturbed by construction be fertilized, limed, and seeded in accordance with the prescribed schedule and seed mixes specified by local soil conservation authorities or land management agencies. Gulf South indicates that it has begun discussions with state and federal agencies regarding seeding mixtures, but that these consultations are not yet complete. To ensure that appropriate vegetative restoration practices would be implemented, **we recommend that**:

- **<u>Prior to construction</u>, Gulf South should consult further with the MDWFP, the LDWF, the ADCNR, the NRCS, and other appropriate agencies regarding seeding and vegetation restoration practices for the proposed Project. Gulf South should file a report with the Secretary for review and written approval by the Director of OEP that describes the outcome of these consultations and identifies the agency-recommended seeding and vegetation restoration practices that Gulf South plans to implement.**

Project impacts to vegetative communities would vary depending upon disturbance duration, magnitude, and vegetation cover type. As described above, approximately 72 percent of the disturbed vegetation would be forested. Due to the nature of forest regrowth, the clearing of these areas may result in long-term to permanent effects in these areas. These long-term and permanent impacts to forested areas would be minimized by the measures described above. Additionally, Gulf South avoids forested areas to the extent possible through selective routing, and minimizes impacts to vegetation through extensive collocation with existing rights-of-way. Impacts to agricultural, open-land, or pasture lands would be minimal and limited primarily to the construction phase. Based on Gulf South's proposed measures to avoid and minimize impacts to forested areas, the relatively minor impacts to agricultural areas, pastures, and open lands, and the implementation of Gulf South's plans, we believe that impacts to general vegetative communities would be minimized.

3.5.3 Impacts and Mitigation to Vegetation Communities of Special Concern or Value

Conservation Reserve Program Lands

Most of the general construction impacts described above are applicable to specially designated vegetation types or conservation programs depending on the vegetation present. These specially designated areas include CRP lands, which may be grassland or forest.

CRP lands occurring at MP 17.1 in Simpson County Mississippi, MP 37.5 and MPs 41.6 to 42.4 in Smith County, Mississippi, and an undetermined amount in Clarke County, Mississippi would be released from the CRP. Impacts and mitigation for vegetation in CRP lands would be similar to those described above, depending on whether each site was forested or not. Impacts to CRP lands are discussed in more detail in Section 3.8.

Extensive Forested Tracts

The proposed Project may affect extensive forested tracts. The large forested tracts would be affected by clearing of the 100-foot-wide construction right-of-way and routine mowing, cutting, and trimming along the proposed 60-foot-wide permanent pipeline right-of-way. Cleared forested areas located outside of the permanent right-of-way would be allowed to revegetate, but effects to those areas would be long-term as vegetative strata would be altered for up to 30 years or more, until mature trees replace early herbaceous, shrub, and sapling strata. Forested areas within the 60-foot-wide permanent pipeline right-of-way would be permanently affected and replaced by herbaceous and shrubby areas. Gulf South attempted to minimize impacts to large, contiguous forested tracts by routing the proposed Project along existing rights-of-way to the extent possible (approximately 66 percent of the proposed route) and through other previously disturbed areas, such as agricultural and open lands, as well as other previously disturbed, fragmented, and/or managed forested areas. We have included a condition regarding minimization of impacts to individual trees within certain wetlands previously in Section 3.4.3.1

3.5.4 Exotic or Invasive Plant Communities

Invasive species can out-compete and displace native plant species, thereby negatively altering the appearance, composition, and habitat value of affected areas. Chinese tallow tree (*Sapium sebiferum*) was observed at two locations along the route of the proposed pipeline, between MPs 50.74 to 50.84 and at MP 52.65. Chinese tallow tree is a deciduous tree reaching up to 60 feet in height that is fast growing, can thrive in both wet and dry sites, can displace native vegetation, and is able to successfully invade undisturbed forests (Invasive Species, 2006).

The MNHP identified cogon grass (*Imperata cylindrica*) and itchgrass (*Rottboellia cochinchinensis*) as potentially occurring within the proposed Project area. Cogon grass is a perennial grass that spreads through wind-blown seeds and forms dense infestations by branching underground rhizomes, a thick system of mat-forming roots that sprout. Cogon grass competes with hardwood species for light, water, and nutrients and can grow so extensively that it decreases growth and increases mortality of young trees (Matlack, 2002). Itchgrass is an aggressive weed that is spread by water, animals, contaminated crop seed, and harvesting equipment. Needlelike hairs on its leaf sheath break off in the skin, which may cause painful infections to people coming into contact with itchgrass.

In order to minimize the impacts of exotic and invasive species, Gulf South would implement its plans, which include measures to reduce erosion such as topsoil stripping and specific vegetation restoration measures. Furthermore, as described above, locally prescribed seed mixes and post-construction monitoring measures would be implemented to further minimize the spread of exotics to and within the Project area.

Gulf South indicates that it would continue to coordinate with federal and state resource agencies to identify appropriate control measures for invasive and exotic plant species. Because those consultations are not yet complete, **we recommend that:**

- **<u>Prior to construction</u>, Gulf South should file with the Secretary for review and written approval by the Director of OEP, an Exotic and Invasive Species Control Plan developed in consultation with the FWS, the LDWF, the MDWFP, the ADCNR, and the NRCS. This plan should identify the specific measures that Gulf South would implement during construction and operation to control exotic and invasive plant species.**

The temporary removal of vegetation may result in increased opportunities for invasive and exotic species to establish themselves in Project rights-of-way and ATWSs. Adherence to its plans in conjunction with consultations with local and state agencies would minimize the potential for the introduction or establishment of nuisance and exotic species within the proposed Project area.

3.5.5 Conclusion Regarding Impacts to Vegetation

The proposed Project would impact five upland vegetation communities (see Table 3.5.1-1) that would include CRP lands and extensive forested tracts. Long-term and permanent effects would occur within the permanent right-of-way within forested areas. However, vegetation impacts would be minimized by the collocation of the proposed pipeline with existing rights-of-way and the implementation of Gulf South's Procedures. Based on Gulf South's proposed measures to avoid and minimize impacts to forested areas, the relatively minor impacts to agricultural areas, pastures, and open lands, and the implementation of Gulf South's plans, we believe that impacts to general vegetative communities would be minimized.

3.6 WILDLIFE AND AQUATIC RESOURCES

3.6.1 Wildlife

3.6.1.1 Existing Wildlife Resources

A variety of wildlife species and habitat types would be crossed by the proposed Project. Representative wildlife species commonly found with the proposed Project area are listed in Table 3.6.1.1-1. Upland forest, pine plantation, open land, PFO, PSS, PEM, and POW habitats would all be affected by construction and operation of the proposed Project. Threatened and endangered species and state-listed species are discussed in Section 3.7, and colonial nesting birds and migratory birds are discussed below.

Wildlife Species

Migratory Birds

The Migratory Bird Treaty Act regulates the taking of, or impacts to, migratory birds, including their nests. Gulf South identified 170 migratory bird species that could potentially occur along the proposed Project. Migratory birds would be expected to occur at least as transients in the proposed Project throughout most of the year. Although construction and maintenance of the pipeline right-of-way would benefit some species through the creation and maintenance of edge habitats, other species would be adversely affected, especially if nesting activities were disturbed by vegetative clearing activities associated with construction and maintenance of the proposed Project.

The Project would be constructed between September and December, as proposed, thereby avoiding the major migratory bird spring nesting season. Additionally, Gulf South would not conduct routine vegetative maintenance of the full pipeline right-of-way more frequently than once every three years, except along a corridor not exceeding 10 feet in width, centered on the pipeline, which would be maintained annually in an herbaceous state to facilitate periodic corrosion and leak detection surveys. Furthermore, Gulf South indicates that routine vegetative maintenance clearing would not occur between April 15 and August 1 of any year to minimize the potential for Project-related disturbance of migratory bird nesting periods. The potential exists for Project-related construction activities to occur during the migratory bird nesting season if construction were delayed, but population-level impacts would not be expected if impacts did occur.

TABLE 3.6.1.1-1
Representative Wildlife Species That Occur Along the Proposed Southeast Expansion Project

		Upland Forest			Wetlands			
Common Name	**Scientific Name**	**Mixed Loblolly/ Hardwood Forests**	**Slope Hardwood Forest**	**Pine Plantation**	**Forested (PFO) and Scrub-Shrub Wetlands**	**Emergent Wetlands (PEM)**	**Open Water**	**Open Land, Agriculture, and Pasture**
Pine warbler	*Dendroica pinus*	X	X	X				
Brown-headed nuthatch	*Sitta pusilla*	X	X	X				
Red-headed woodpecker	*Melanerpes erythrocephalus*	X			X			
Wild turkey	*Meleagris gallopavo*	X	X	X				X
Mourning dove	*Zenaida macroura*	X	X					
Northern bobwhite	*Colinus virginianus*	X		X				X
Wood duck	*Aix sponsa*				X	X		
Louisiana waterthrush	*Seiurus motacilla*				X			
Green heron	*Butorides virescens*				X	X	X	
Red-tailed hawk	*Buteo jamaicensis*	X	X	X				X
Mississippi kite	*Ictinia mississippiensis*	X	X		X	X		X
Red-winged blackbird	*Agelaius phoeniceus*				X	X		X
White-tailed deer	*Odocoileus virginianus*	X	X	X	X	X		
Cottontail rabbit	*Sylvilagus* spp.	X	X					
White-footed mouse	*Peromyscus leucopus*	X	X	X				
Hispid cotton rat	*Sigmodon hispidus*	X	X	X				
Opossum	*Didelphidae*	X	X	X				
Raccoon	*Procyon* spp.	X	X	X	X	X		
Gray squirrel	*Sciurus carolinensis*	X	X					
Nine-banded armadillo	*Dasypus novemcinctus*	X	X	X				X
River otter	*Lutra canadensis*				X	X	X	
Nutria	*Myocastor coypus*				X	X	X	
Three-toed box turtle	*Terrapene carolina triunguis*	X	X					X
Western cottonmouth	*Agkistrodon piscivorus leucostoma*				X	X	X	
Bullfrog	*Rana catesbeiana*				X	X	X	
Southern leopard frog	*Rana sphenocephala*				X	X		
Green tree frog	*Hyla cinerea*				X	X		

Colonial Nesting Waterbirds

"Colonial nesting waterbirds" is a collective term used to refer to a variety of bird species that obtain all or most of their food from aquatic and wetland environments and gather in large colonies, or rookeries, during their respective nesting seasons (FWS, 2002). Colonial nesting waterbirds concentrate in these rookeries on sandbars and islands within or along riparian zones or major waterways. According to consultations with FWS, no colonial nesting birds are anticipated to occur within the Project area. Additionally, no colonial nesting water birds were noted in the survey corridor. However, Gulf South would include training material for construction workers to familiarize them with the identification of waterbird colonies, and all EIs would be trained to notify Gulf South immediately upon the unanticipated discovery of a waterbird colony in the proximity of the right-of-way. In the unlikely event that a waterbird colony is encountered, Gulf South would implement appropriate measures to meet site-specific needs and would coordinate with the FWS and applicable state agencies as necessary.

Habitat Types

Upland Forest

Approximately one-half of the proposed Project would cross upland forest habitat which consists of loblolly pine-hardwood/pine forests and slope hardwood forest. Although pine/hardwood forests can have an understory of small shrub species and herbaceous growth, the understory would naturally trend toward hardwood dominance without periodic fire suppression. This habitat type provides necessary food, cover, and young-rearing habitat for a wide variety of wildlife species.

Pine Plantation

Pine plantations provide various elements necessary to support wildlife populations. Early and intermediate successional stages are typically the stages that are most highly used by wildlife. However, even after the canopy has closed, openings, edge habitat, and areas periodically subjected to prescribed fire can provide relatively good habitat and forage capable of sustaining a diverse wildlife assemblage. Many of the species that inhabit the mixed and slope forests use adjacent pine plantations at different times. The numbers and types of wildlife are usually greater along the edges.

Open Land

Open lands include maintained utility rights-of-way, upland scrub-shrub areas, and other non-agricultural herbaceous areas. Plant species in these areas include saplings of many of the tree species listed above, along with smilax (*Smilax* spp.), dewberries (*Rubus* spp.), peppervine (*Ampelopsis arborea*), holly species (*Ilex* spp.), and various grasses. Open lands generally provide poor to moderate quality wildlife foraging habitat and moderate to good cover habitat; however, the open land cover type is important to many of the same species found in the forested habitats because it provides "edge" habitat that is important for feeding and raising young. Edge habitats are transition zone areas where two different habitat types meet, such as forested and open land or agriculture fields. These transition zones provide distinct changes in available food types, unique nesting or breeding habitats, and travel corridors. Typical edge species that are somewhat dependent on this type of land cover are the white-tailed deer (*Odocoileus virginianus*), red-tailed hawk (*Buteo jamaicensus*), eastern meadowlark (*Sturnella magna*), cotton mouse (*Peromyscus gossypinus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginianus*), striped skunk (*Mephitis mephitis*), and various migratory birds.

Wetlands

Wetland types crossed by the proposed Project include PFO, PSS, PEM, and POW communities. For a more detailed description of each of these wetland types, refer to Section 3.4. Although a number of the wildlife species noted above may occupy these wetland areas from time to time and depend on them for a portion of their normal habitat, several species are typically found only in these land cover types. Among the animals that are normally found only in wetland ecosystems are the wood duck (*Aix sponsa*), American wigeon (*Anas americana*), cottonmouth (*Agkistrodon piscivorus)*, diamond-backed water snake (*Nerodia rhombifer*), southern leopard frog (*Rana sphenocephalus*), bullfrog (*Rana catesbiana*), beaver (*Castor canadensis*), green heron (*Butorides striatus*), various other reptiles and amphibians, and numerous neotropical migratory songbirds. During periods of flooding, these areas also provide important wintering habitat for migratory waterfowl such as mallard ducks (*Anas platyrhynchos*).

3.6.1.2 General Impacts and Mitigation

The extent and duration of impacts to wildlife and their habitats resulting from construction and operation of the proposed Project would depend on the species present in each habitat type and their individual life history requirements.

Pipeline Facilities

Construction of the proposed pipeline would require the clearing of vegetation within the construction right-of-way, which would temporarily remove and reduce the quality of cover, nesting, and foraging habitat for wildlife. The loss and reduction in quality of wildlife habitat would result in the temporary displacement and avoidance of wildlife, which would increase stress, injury, and the potential for mortality. Less mobile species may be affected by construction activities due to direct mortality or permanent displacement, potentially affecting reproduction, recruitment, and survival.

Similar effects, although much less extensive, would result from routine maintenance of vegetation along the permanent right-of-way. Approximately 60 percent of the total upland forested area (including pine plantation) affected during construction, and approximately 42 percent of the affected PFO wetlands, would be permanently affected by maintenance of the pipeline right-of-way during operations. Areas within the permanent right-of-way would be permanently converted and maintained as PEM or PSS wetlands.

Non-forested habitats that would be affected by construction and operation of the proposed Project include agricultural areas, pastures, open lands, PSS, and PEM wetlands. Refer to Section 3.8 for a summary of the acreage impacts to each of these habitats. The impact on these habitats and associated wildlife species would be relatively minor and either temporary or short-term. Temporary impacts to wildlife along the pipeline corridor and associated workspaces would be limited to the time of construction activities. However, these impacts would be of relatively short duration and species and their habitats should recover quickly. Due to the rapid pace of pipeline installation and the vegetation restoration measures included in Gulf South's plans and Procedures, the areas would generally be restored within one growing season or within three years after construction for scrub-shrub habitats. Following construction, all extra work areas outside the permanent right-of-way, including ATWSs, would be allowed to revert to pre-construction conditions. In wetlands, all workspace outside the 30-foot-wide permanently maintained right-of-way would likewise be allowed to revert to natural conditions. Gulf South's Procedures allow for periodic selective thinning of trees within 15 feet of the pipeline that grow taller than 15 feet in wetlands, and this selective thinning is anticipated to have minimal impact on wildlife.

Effects to wildlife using forest habitats would be more severe than that to wildlife inhabiting other habitat types, as vegetative strata in those areas would undergo a more marked change. These changes include the conversion of forested habitat to non-forested habitat within the permanent right-of-way and competition with other species for food and foraging areas. Potential impacts to wildlife would include not only the broader loss of habitat in general, but also potential losses of den or nesting sites. The area of upland forest, pine plantation, and PFO habitats that would be affected by construction of the proposed Project would be considerable locally. With the exception of the 15-foot selective tree thinning mentioned above, disturbed areas located outside the permanent right-of-way would be allowed to revert to their pre-construction cover type, but this process would take 30 years or more in some forested habitats, representing a long-term impact. Construction would affect a relatively small percentage of the forested habitats in the general vicinity of the proposed Project, and routine maintenance activities during operations would be relatively infrequent and performed in accordance with Gulf South's Plan and Procedures.

Gulf South would minimize impacts to wildlife species and habitats resulting from construction and operation of the proposed Project through the implementation of its plans and Procedures. Gulf South would also mitigate impacts to wildlife species and habitats through avoidance and minimization. Specifically, the proposed route would be collocated with or parallel existing utility rights-of-way where possible, thereby minimizing impacts to previously undisturbed wildlife habitats. The collocation and overlapping of rights-of-way would substantially reduce the amount of wildlife habitat clearing required as compared to construction in greenfield or other areas where overlapping was not possible.

Aboveground Facilities, Pipe Storage and Contractor Yards, and Access Roads

Construction of the aboveground facilities would permanently affect several wildlife habitats; however, these areas represent a small percentage of the land area and wildlife habitats affected by the proposed Project. Generally, wildlife occurring in these areas would be permanently displaced, which would result in increased stress, injury, and/or mortality.

Construction of the proposed Delhi, Harrisville, and Destin Compressor Stations, M/R stations, ancillary valves, pig launchers, and receivers would permanently impact approximately 46.6 acres of upland forested habitat (including pine plantation). Additionally, approximately 69.5 acres of agriculture and 3.2 acres of open lands would be permanently affected by operation of aboveground facilities. Areas temporarily disturbed during construction of the aboveground facilities would be allowed to revert to their pre-construction conditions. All disturbed areas associated with the aboveground facilities that would not contain infrastructure, such as buildings and other enclosures, would be finish-graded and seeded or covered with gravel, as appropriate. All roads and parking areas would be graveled. Thus, construction of the aboveground facility sites would result in the loss and permanent conversion of some existing wildlife habitat into potentially non-vegetated industrial/commercial uses. No wetlands or waterbodies would be affected by maintenance of these aboveground facilities.

Three pipe storage and contractor yards would be used for storage and construction of pipeline materials and facilities and would affect approximately 41.0 acres of previously classified commercial/ industrial use. This acreage would only be temporarily impacted by construction.

Gulf South stated that it would access the proposed pipelines and facilities using public and private roads to the extent practical. In addition, improvement or addition of access roads would cause temporary impacts to approximately 0.4 acre of upland forested areas and 0.8 acre of open land. There are also no anticipated construction impacts to agricultural or pasture habitats. Section 3.8 provides additional information on access roads planned in association with the proposed Project.

3.6.1.3 Conclusion Regarding Impacts to Wildlife Habitats and Species

The proposed Project would affect wildlife and wildlife habitats along the proposed route. Impacts would be temporary, long-term and permanent. Specifically, wildlife would be displaced, injured, or killed by construction activities, but these impacts would be minor on a population level. Based on the characteristics of identified wildlife and wildlife habitats, anticipated impacts to them, and measures proposed by Gulf South to avoid or minimize these impacts, we believe that construction and operation of the proposed Project would not significantly impact wildlife and wildlife habitats.

3.6.2 Aquatic Resources

3.6.2.1 Existing Aquatic Resources

As described in Section 3.3.2, the proposed Project would cross a total of 308 waterbodies: 103 perennial streams, 196 intermittent streams, and 9 ponds. Fishery classifications, timing restrictions, and other general information regarding the surface waterbodies crossed by the pipeline route were obtained from FWS, LDWF, MDWFP, MNHP, ADCNR, and ADEM. These waterbodies are classified as warmwater and support numerous aquatic species, including fish and mussels. Table 3.6.2.1-1 lists warmwater fish and mussel species commonly found in waterbodies affected by the proposed Project. Refer to Section 3.7.1 for more detailed information regarding potential impacts to threatened and endangered species potentially existing in waterbodies traversed by the proposed Project.

No essential fish habitat (EFH), as managed by the National Marine Fisheries Service (NMFS) is located within the proposed Project area.

TABLE 3.6.2.1-1
Fish and Mussel Species Occurring in the Proposed Southeast Expansion Project Area

Common Name	Scientific Name
Fish	
Alligator gar	*Atractosteus spatula*
Bigmouth buffalo	*Ictiobus cyprinellus*
Black crappie	*Poxomis nigromaculatus*
Bluegill sunfish	*Lepomis macrochirus*
Channel catfish	*Ictalurus punctatus*
Largemouth bass	*Micropterus salmoides*
Long-eared sunfish	*Lepomis megalotis*
Longnose gar	*Lepisosteus osseus*
Red-eared sunfish	*Lepomis microlophus*
Spotted gar	*Lepisosteus oculatus*
White crappie	*Poxomis annularis*
Mussels	
Round pearlshell	*Glebula rotundata*
Bankclimber	*Plectomerus dombeyanus*
Bleufer	*Potamilus pupuratus*
Mapleleaf	*Quadrula quadrula*

TABLE 3.6.2.1-1 Fish and Mussel Species Occurring in the Proposed Southeast Expansion Project Area	
Common Name	**Scientific Name**
Southern mapleleaf	*Quadrula apiculata*
Tapered pondhorn	*Uniomerus declivus*
Three ridge	*Amlema plicata*
Wabash pigtoe	*Fusconaia flava*
Washboard	*Megalonaias nervosa*
Threehorn	*Obliquaria reflexa*
Pondmussel	*Ligumia subrostrata*
Pistolgrip	*Tritogonia verrucosa*
Paper pondshell	*Utterbackia imbecillis*

Fisheries of Special Concern

Fisheries of special concern include areas containing exceptional recreational or commercial fisheries, specially designated streams or rivers, and waterbodies supporting rare or endangered aquatic species.

As described previously, the proposed Project would cross seven waterbodies that may contain threatened or endangered species or critical habitat; Little Creek (MP 7.1), Strong River (MP 18.0), Dabbs Creek (MP 12.4), Leaf River (MP 44.2), West Tallahala River (MP 45.3), Chickasawhay River (MP 89.3), and Bucatunna Creek (MP 100.5). Dabbs Creek, Leaf River, West Tallahala River, Chickasawhay River, Bucatunna Creek, and the Strong River are designated as critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and the Strong River is critical habitat for the Ringed Map Turtle (*Graptemys oculifera*). The Chickasawhay, Leaf, and Strong Rivers could provide suitable habitat for the threatened yellow-blotched map turtle (*Graptemys flavimaculata*). Little Creek is designated as critical habitat for the Natchez stonefly (*Alloperla natchez).* Each of these species is discussed in more detail in Section 3.7.

3.6.2.2 General Impacts and Mitigation

Gulf South's proposed waterbody crossing methods are listed in Appendix D of this EIS. Depending on the construction method used, direct impacts to aquatic habitats and species would either be avoided (e.g., through HDD) or would occur in localized areas. Waterbody crossings would be accomplished using open-cut or HDD methods, as described in detail in Section 2.3. The use of the open-cut crossing method would result in several temporary effects to aquatic resources, including plankton, aquatic vegetation, amphibians, fish, and aquatic invertebrates including mussels. Impacts to water quality and associated aquatic habitats would include sedimentation, turbidity, altered water temperatures and dissolved oxygen levels, and introduction of contaminants, all of which can affect the ability of aquatic life to survive and reproduce. Impacts would also include the physical disturbance or destruction of in-stream habitat due to trenching and removal of riparian vegetation. Construction activities would also result in blockage of fish migrations, interruptions of spawning activities, as well as entrainment of fish or reduced stream flows during withdrawals for hydrostatic testing. These potential impacts are discussed below in more detail.

Pipeline construction using open-cut methods would result in sedimentation and turbidity in surface waters and aquatic habitats. Sedimentation and turbidity-related impacts were previously described in Section 3.3.2.2. Resulting disruptions of aquatic life-support processes could include physical disturbance, interruptions to fish passage, altered water temperatures and dissolved oxygen levels, and the introduction of contaminants. Benthic macroinvertebrates, which typically provide a key food source for fish, may be buried under accumulated sediments along with fish nesting sites containing eggs or larvae. However, stream gradients tend to be relatively low in the area of the proposed Project; thus, stream velocities would also tend to be low, indicating that suspended sediments within these streams would only be transported over short distances. As described in Section 3.3.2.2, some of these impacts would be lessened or avoided by Gulf South's use of sediment and erosion controls during construction, hydrostatic test water discharge measures, the relative lack of riparian vegetation to be cleared along waterbody banks, and measures to revegetate riparian and wetland areas. Overall, the impact to aquatic species resulting from construction of the proposed Project would be minor, localized, and short-term, as most waterbody habitats would remain undisturbed. Additionally, many of the warmwater species that occur in the waterbodies crossed by the proposed Project route are accustomed to occasionally turbid conditions and are therefore resilient to such periodic impacts.

Gulf South indicated that it would construct the proposed Project during the period of September 1 through December 31, 2007, pending the Commission's approval of the Project. The proposed schedule for construction is partially outside the standard period for construction in waterbodies containing warmwater fisheries (i.e., June 1 through November 30). In order to ensure that the proposed Project does not significantly affect fisheries resources we recommend in Section 3.3 that Gulf South consult with the FWS, MDWFP, and ADCNR regarding the timing of construction in waterbodies and file approvals with the Commission. As described above and in accordance with Gulf South's Procedures, erosion and sediment control best management practices would be implemented at all waterbody crossings during construction to reduce impacts to affected waterbodies.

As described in Section 2.3, HDD is considered a preferred method for crossing sensitive habitats because stream bottom disruption and subsequent impacts to aquatic habitats along that portion of the pipeline route would be eliminated or minimized. HDD construction methods are discussed in Section 3.3.2.2. Gulf South has developed a HDD Plan that describes the procedures that would be implemented to monitor for, contain, and clean up any potential releases of drilling fluid during HDD operations. Given these protective measures, we believe the risk to aquatic habitats and species from a frac-out would be low.

Overhanging vegetation in riparian and adjacent wetland areas, undercut banks, logs, and other streamside features provide cover for fish. These types of cover and instream habitats would be disturbed by clearing and open-cut trenching during construction, resulting in decreased shading, increased water temperatures, and displacement of fish from disturbed areas. However, streamside clearing would be localized and would occur immediately adjacent to the construction right-of-way. Overall, these impacts would be relatively minor, as they would affect a relatively small length of a much longer, linear, stream feature.

Introduction of pollutants into waterbodies and aquatic habitats would occur through disturbance of contaminated soils or sediments, accidental spills, and inadvertent releases of drilling fluids during HDD operations. Pollutants would affect fish and other aquatic life through acute or chronic toxicity, and sub-lethal effects would affect reproduction, growth, and recruitment. Additionally, pollutants can be introduced during discharge of hydrostatic test waters. However, Gulf South has stated that biocides and other potentially toxic hydrostatic test water additives would not be used during hydrostatic testing for the proposed Project. The disturbance and resuspension of contaminated soils and sediments would result in adverse impacts to water quality and in-stream habitat. However, there are no

known contaminated sediments along the proposed Project route, and adverse effects resulting from re-suspension of contaminants is therefore unlikely. Given these conditions and protective measures, the risk to water quality and aquatic species from contaminated soils and sediments is low.

Construction of the proposed Project would also affect fish by blocking migration pathways and interrupting spawning activities. Although construction disturbances would temporarily displace fish or hinder migrations in streams, we anticipate that these effects would be localized, temporary, and generally minor. We also anticipate that Gulf South's proposal to complete construction activities in fall and early winter would further limit or prevent impacts to most species of spawning fish.

Entrainment of fish and other aquatic organisms could occur during withdrawals of hydrostatic test water from the source waterbodies listed in Table 3.3.2.3-1. Gulf South would prevent or adequately limit impacts from hydrostatic testing by implementing measures in its Procedures. These measures include screening to limit entrainment of fish and maintenance of adequate flow rates to protect aquatic life during withdrawals for hydrostatic testing. Although it is possible that fish eggs and larvae would be entrained through the screens, such impacts would most likely be minor during the proposed winter construction period.

3.6.2.3 Conclusion Regarding Impacts to Aquatic Habitats and Species

The proposed Project would result in minor, largely temporary impacts to aquatic habitats and species; however, the measures proposed by Gulf South, including the use of HDDs to cross many streams, would significantly limit impacts to aquatic species and habitat. Given these measures and the temporary and localized nature of impacts, we believe that the proposed Project would result in only minor impacts to aquatic habitat and species.

3.7 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

3.7.1 Federally Listed Threatened and Endangered Species

Section 7 of the ESA requires federal agencies to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed endangered or threatened species or result in the destruction or adverse modification of designated critical habitat for any federally listed species. The FERC, as lead agency in the review of the proposed Project, is required to consult with the FWS to determine whether federally listed or proposed species or their designated critical habitat may occur in the proposed Project area, and to determine the proposed action's potential effects on these species and critical habitats. For actions involving major construction activities with the potential to affect listed species or designated critical habitats, the FERC must report its findings to FWS in a Biological Assessment (BA).

Based on consultation with the FWS and a review of existing records, we have identified 10 federally listed threatened or endangered species potentially occurring in the vicinity of the proposed Project (Table 3.7.1-1). A description of these species, their preferred habitats, and potential for occurrence, as well as our assessment of potential effects to them resulting from construction and operation of the proposed Project, is provided below.

TABLE 3.7.1-1
Federally Listed Species Potentially Occurring Along the Proposed Southeast Expansion Project

Common Name/Scientific Name	Federal Status[a]	Alabama Status[b]	Mississippi Status[c]	Louisiana Status[d]	County/Parish (Portion of Potential Range Crossed by the Proposed Project)[e]
Gopher tortoise[g] *(Gopherus polyphemus)*	T	T	E	T	Clarke, MS; Choctaw, AL
Eastern indigo snake[h] *(Drymarchon corais)*	T	T	E	--	Clarke, MS; Choctaw, AL
Yellow-blotched map turtle[h] *(Graptemys flavimaculata)*	T	--	E	--	Clarke, MS
Ringed map turtle[h] *(Graptemys oculifera)*	T	--	E	T	Simpson, MS
Louisiana black bear[h] *(Ursus americanus luteolus)*	T	--	E	T	Simpson, Smith, Jasper and Clarke, MS; Richland, LA
Gulf sturgeon[h] *(Acipenser oxyrinchus desotoi)*	T	T	E	T	Clarke and Simpson, MS; Choctaw, AL
Bald eagle[f, h] *(Haliaeetus leucocephalus)*	T	T	E	E	Statewide in Mississippi; Richland, LA; Choctaw, AL
Wood stork[h] *(Mycteria americana)*	E	E	E	--	Choctaw, AL
Red-cockaded woodpecker[i] *(Picoides borealis)*	E	--	E	E	Jasper and Smith, MS
Inflated heelsplitter mussel[i] *(Potamilus inflatus)*	T	T	E	T	Choctaw, AL

Notes:
a http://www.fws.gov/endangered/
b Letter dated August 17, 2006, from Penny Ragland (ADCNR)
c http://www.mdwfp.com/museum/downloads/animal_tracking.pdf
d http://www.wlf.louisiana.gov/experience/threatened/threatenedandendangeredtable/
E = Endangered
T = Threatened
e AL = Alabama
LA = Louisiana
MS = Mississippi
f Delisted effective August 8, 2007
g Determination of Effect – may affect
h Determination of Effect – not likely to adversely affect
i Determination of Effect – no effect

Based on our review of these species, we have determined that construction and operation of the proposed project would result in no effect to the red-cockaded woodpecker and the inflated heelsplitter; is not likely to adversely affect the Louisiana black bear, eastern indigo snake, yellow-blotched map turtle, ringed map turtle, Gulf sturgeon (including its critical habitat), bald eagle, and the wood stork; and may affect the gopher tortoise.

With the issuance of the DEIS on April 13, 2007, we requested that the FWS accept the DEIS as our BA and requested the initiation of formal consultation as required by Section 7 of the ESA. In a letter dated April 23, 2007 to the Commission, the FWS Jackson Field Office acknowledged the receipt of the DEIS and accepted our request for initiation of formal consultation. Based on its review of the proposed Project and the BA provided by Staff, the FWS issued a Biological Opinion (BO) on July 6, 2007. In its BO the FWS concurred with our determinations of "not likely to adversely affect" and

determined that the proposed Project is not likely to jeopardize the continued existence of the gopher tortoise, is not likely to adversely modify designated critical habitat and issued an incidental take statement. The FWS also identified several non-discretionary terms and conditions applicable to the gopher tortoise which must be adhered to in order to be exempt from prohibitions of section 9 of the ESA. Additionally, three discretionary conservation recommendations were made by the FWS to further protect the gopher tortoise and its habitat. These non-discretionary terms and conditions and conservation recommendations have been incorporated into the gopher tortoise species description below.

Since the issuance of the BO, Gulf South has modified its proposed route and identified new access roads and additional temporary workspaces. Gulf South has compiled additional information on species occurrence and habitat that has not been reviewed by the FWS; therefore, to ensure that these areas are properly reviewed for the presence or absence of federally listed species and their habitats, and that any mitigation or construction related to these areas is in accordance with applicable FWS requirements, **we recommend that:**

- **Gulf South should not begin construction activities on modified work areas <u>until</u>:**

  a. **the staff completes Section 7 consultations with the FWS; and**

  b. **Gulf South has received written notification from the Director of OEP that construction or use of mitigation may begin.**

3.7.1.1 Gopher Tortoise

The gopher tortoise is a medium-sized turtle with a dark brown to grayish-black colored carapace ranging in size from 9 to 11 inches in length, 6 to 10 inches in width, and 8 to 10 pounds in weight. Typical gopher tortoise habitat consists of well-drained sandy soils that provide abundant herbaceous vegetation for food, and plentiful sunlit areas for nesting and foraging. Gopher tortoises excavate burrows in open landscapes such as roadsides, fence-rows, old fields, and the edges of overgrown uplands. The size of a gopher tortoise burrow varies depending on the size of the turtle; however, burrows are generally about 15 feet long and 6 feet deep with the entrance shaped in the form of a half moon. Gopher tortoises are territorial with well-defined home ranges that increase in size with age. Gopher tortoises also occur in colonies of two or more active burrows that are typically located within 600 feet of each other. Gopher tortoises mate between May and July, with nesting taking place from mid-April through mid-July (Nature Serve, 2006).

Using approved FWS survey guidelines and methodologies as described in Appendix K, 21 gopher tortoise burrows were identified within or adjacent to the proposed Project corridor.

Construction of the proposed Project, including clearing and trenching, would adversely affect gopher tortoises and gopher tortoise habitat found within the temporary construction right-of-way. Specifically, as described in Appendix K, Gulf South would relocate gopher tortoises found within the proposed temporary construction right-of-way. Gulf South's relocation efforts would result in stress to gopher tortoises and could lead to injury and/or mortality. Following the relocation of found gopher tortoises, Gulf South would construct the proposed pipeline which would result in the permanent removal of existing gopher tortoise burrows and would temporarily affect gopher tortoise habitat by removing vegetation and disturbing soils.

Operation of the proposed Project, including inspection and maintenance (i.e., mowing) activities that would require the use of light and heavy equipment, could adversely affect gopher tortoises. The general use of equipment could result in stress to gopher tortoises or modification of their habitat.

Conversely, construction and operation of the proposed Project could also beneficially affect gopher tortoises by creating and maintaining habitat that gopher tortoises find favorable.

In order to minimize potential adverse impacts to gopher tortoises during construction and operation of the proposed Project, Gulf South has developed a conservation strategy based on information provided by the FWS. Gulf South's conservation strategy is described in detail in Appendix K and includes measures to: educate construction personnel; survey for gopher tortoises prior to, during, and following construction; collect and relocate gopher tortoises; protect gopher tortoises adjacent to proposed construction areas; and monitor and report on these efforts.

Based on known gopher tortoise characteristics, habitat requirements, proposed construction and operation measures and procedures, and Gulf South's conservation strategy, we determined that the proposed Project may affect this species, and as required by Section 7 of the ESA we initiated formal consultation with the FWS regarding this species. As described above, the FWS determined in its BO that the proposed Project is not likely to jeopardize the continued existence of the gopher tortoise, is not likely to adversely modify designated critical habitat, and issued an incidental take statement. Additionally, the FWS also provided the following non-discretionary terms and conditions regarding tortoise relocation efforts:

a. All tortoise burrows found within the construction ROW, regardless of activity status (active, inactive, or abandoned), will be scoped first, then excavated using the backhoe method described in the BA to definitively determine that the burrow is unoccupied.

b. Tortoises that cannot be relocated into an unoccupied burrow will be penned for a minimum of two weeks, at which time pens will be removed.

c. Once released into an unoccupied burrow, or after the two-week penning period, tortoises will be monitored using radio-telemetry. The location of each tortoise will be determined once each day during the first two weeks, once each week until September 1, and then once each month (including dormant season) for one year (September 1 of the following year).

d. If a tortoise moves outside of its original colony range within the first two weeks after its release into an unoccupied burrow (or after the two-week penning period), that tortoise will be recaptured and temporary-penned for two weeks.

e. Tortoises collected between **October 1 and October 15** will require these additional procedures:

   i. Tortoises will be relocated into suitable inactive or abandoned burrows unoccupied by another tortoise and enclosed by a suitable pen for the duration of the dormant season, until April 1.

   ii. Tortoises will be monitored late in the afternoon when the predicted nighttime low temperature will be below 60 degrees. Monitoring will be conducted for each of the first five nights when such low temperatures are predicted. Monitoring will identify any tortoise located aboveground outside the burrow. The air temperature at ground level will be recorded at the time any aboveground tortoise is observed. Also, the behavior of any aboveground tortoises will be recorded, noting whether animals are moving within the enclosure, digging at the enclosure walls, or whether they are stationary at the mouth of the burrow.

iii. Monitoring will continue after sundown to determine if any aboveground tortoises observed during late afternoon have taken shelter in their burrow, or if they remain aboveground, or if they periodically emerge aboveground after sundown. If any tortoise is found aboveground, its behavior will be observed and recorded with the measured air temperature at ground level. If any tortoise is observed aboveground at or after sundown, the animal will be pushed into the burrow and the burrow will be staked to prevent the tortoise from emerging. Stakes will be removed the following morning by 10:00 AM. Monitors will observe special precautions to approach the burrows and enclosures quietly so as not to disturb tortoises or alter their behavior due to the monitors' presence.

iv. Whenever a tortoise has been observed aboveground after sundown during such monitoring, the MS Field Office will be contacted the next day to report and evaluate the observed incident. One of three options will be implemented with concurrence of the MS Field Office.

1. The first option will be a continuation of monitoring, as previously described.

2. The second option will be to stake the entrance of the burrow closed with survey stakes during the late afternoon to prevent the tortoise from leaving the burrow at night, regardless of whether the animal is within the burrow when the opening is staked. Stakes will be removed during the day, from 10 AM to 4 PM, to allow for normal basking behavior. On any day following a night when the burrow was staked closed, the behavior of the tortoise will be monitored and the air ground temperature recorded. If the tortoise remains aboveground the following night when temperatures are below 60 degrees, the tortoise will be placed in the burrow and the opening staked closed again. The MS Field Office must be contacted the next day to determine which of these options to continue.

3. The third option will be a continuation of monitoring, but if the tortoise is observed aboveground again, it will be hand-captured from within the enclosure and removed to temporary captivity in a climate controlled indoor facility. Tortoises must be transported in a suitable container (not a wire cage) within the vehicle to the facility. The Service must approve the facility and the procedures for captive care for the duration of the dormant season. After March 31, any captive tortoises will be transported and released at the site as described by the BA.

f. Following the relocation of tortoises, a report documenting the capture and displacement of gopher tortoises will include the following information: (1) names and qualifications of the investigators; (2) survey dates; (3) area surveyed; (4) specific burrow locations, including UTMs or lat/longs; (5) burrow size, condition, and activity level; (6) the individual marking used to identify each relocated tortoise and their associated original and relocated burrow sites; (7) date of relocation; and (8) monitoring results. The survey report will be sent to the MS Field Office.

g. The Service will be notified if construction is completed without the capture (trapping or excavation) and relocation of gopher tortoises from construction workspaces.

The FWS has also provided the following discretionary conservation recommendations to minimize or avoid adverse effects of the proposed action on listed species and critical habitats, and to help carry out recovery plans or to develop additional species information.

1. Avoid identifying gopher tortoise burrow locations to the public. Undue public attention to gopher tortoise colonies may increase the risk of human harassment, injury, and/or capture.

2. Develop a management plan for controlling cogongrass along the new ROW. The plan should include the following:

   (a) Gulf South maintenance personnel will be trained to identify cogongrass

   (b) Mowing equipment will be cleaned after mowing cogongrass infected areas

   (c) Cogongrass areas will be treated using appropriate herbicide treatments

3. Conduct a gopher tortoise burrow inventory of all Gulf South ROWs within the range of the federally protected gopher tortoise. This inventory should be completed on a 3-5 year rotation, and the results should be sent to the FWS and the Mississippi Museum of Natural Science for inclusion into the state's tracking database.

In order to ensure that the gopher tortoise is protected and to ensure compliance with FWS terms and conditions, **we recommend that:**

- **Gulf South should file a revised Conservation Strategy for the Gopher Tortoise and Eastern Indigo Snake that incorporates all non-discretionary terms and conditions of the FWS's BO for this Project, as well as conservation recommendations 1 and 2.**

Gulf South proposes to monitor the pipeline ROW for three years following the initial relocations of gopher tortoises. Since Gulf South proposes post construction monitoring that we believe is sufficient to assess project-related impacts of gopher tortoise relocations, we are not recommending the discretionary conservation recommendation 3.

3.7.1.2 Eastern Indigo Snake

In the vicinity of the proposed Project, the eastern indigo snake is typically associated with inactive gopher tortoise burrows. The eastern indigo snake is generally believed to be extirpated from the proposed Project area. However, since gopher tortoise burrows have been identified within and near the proposed Project, Gulf South would, based on its consultations with the FWS and to minimize potential affects to this species, adhere to Eastern Indigo Snake Protection Measures. These measures are:

- If an eastern indigo snake is sighted during construction, the contractor would be required to cease all operation(s) that might cause harm to the snake.

- If the snake does not move away from the construction area, a state or federal biologist would be contacted to capture and relocate the snake to suitable habitat either adjacent to the Project area or off-site to an acceptable donor site.

- If an eastern indigo snake is killed or found dead within the construction area, the snake should be frozen and the FWS Jackson Field Office notified immediately.

Based on the believed scarcity of the eastern indigo snake and Gulf South's adherence to its identified protection measures, we have determined that construction and operation of the proposed Project is not likely to adversely affect this species.

3.7.1.3 Yellow-Blotched Map Turtle

The yellow-blotched map turtle is a medium sized turtle reaching a maximum of 7 inches long. It is only known to exist in the Pascagoula River and its tributaries in Mississippi. The areas along the pipeline route that would be expected to contain this species include the Leaf and Chickasawhay Rivers (MNHP, 2006).

The yellow-blotched map turtle's habitat requirements include strong currents and large sandbars. This turtle spends several hours each day basking on tree limbs, requiring abundant snags or downed trees in rivers wide enough for sunlight penetration. The species is threatened by the recreational use of nesting areas such as sand bars and beaches by humans, the colonization of nesting areas by non-native vegetation, water pollution, and a relatively low reproductive frequency (Nature Serve, 2006).

Gulf South proposes to cross the Leaf and Chickasawhay Rivers via HDD. In the event of a frac-out, Gulf South's HDD Plan would be implemented to minimize any impact to the species. Additionally, the drilling fluid that would be used by Gulf South would be non-toxic. Given the proposed crossing methods of these rivers and the HDD Plan, we determine that the proposed Project is not likely to adversely affect the yellow blotched map turtle.

3.7.1.4 Ringed Map Turtle

The ringed map turtle is a medium-sized turtle reaching a maximum of 8 inches in females, with a dark, olive green carapace and distinctive black spine-like projections along the middle ridge of the carapace. Within the Project area, the ringed map turtle is known to inhabit the Strong River in Simpson County, Mississippi (MNHP, 2006).

Typical ringed map turtle habitat consists of medium- to large-sized rivers with strong currents and large, open sandbars suitable for nesting. Like the yellow-blotched map turtle, the ringed map turtle spends much of its time basking and requires abundant snags or downed trees in rivers that are wide enough to allow for ample sunlight penetration (Nature Serve, 2006). Nesting typically occurs in June with the female laying a clutch of three to four eggs. In some cases, nesting may take place twice a year (Nature Serve, 2006). The species is threatened by the recreational use of nesting areas such as sand bars and beaches by humans, the colonization of nesting areas by non-native vegetation, and water pollution (Nature Serve, 2006).

Gulf South proposes to cross the Strong River via HDD. In the event of a frac-out, Gulf South's HDD Plan would be implemented to minimize any impact to the species. Additionally, the drilling fluid that would be used by Gulf South would be non-toxic. Given the proposed crossing method for the Strong River and the HDD Plan, we have determined that the proposed Project is not likely to adversely affect the ringed map turtle.

3.7.1.5 Louisiana Black Bear

The Louisiana black bear is closely related to other subspecies of black bear but has a longer, narrower skull and larger molars. The Louisiana black bear is primarily associated with forested wetlands; however, it may use a variety of habitat types, including marsh, spoil banks, and upland forests. Within forested wetlands, black bear habitat requirements include soft and hard mast for food, thick

vegetation for escape cover, vegetated corridors for dispersal, large trees for den sites, and isolated areas for refuge from human disturbance (FWS, 2006b).

The primary threats to this species are continued loss of bottomland hardwoods and fragmentation of remaining forested tracts. In addition to habitat loss, human-bear conflicts are a major threat to the conservation and protection of the Louisiana black bear. Losses of bears result from collisions with automobiles, intentional/illegal killing, and removal from the wild, which is often necessary when bears become habituated to humans (FWS, 2006b).

Louisiana black bears, particularly pregnant females, normally den from December through April. Preferred den sites include bald cypress and water-tupelo trees with visible cavities that have a dbh of 36 inches or greater in or along rivers, lakes, streams, bayous, sloughs, and other waterbodies. In areas where suitable den trees are uncommon, Louisiana black bears often den in shallow burrows or depressions within areas of dense cover. To further protect denning bears, the FWS has extended legal protection to actual or candidate den trees. As the terms imply, "actual den tree" refers to any tree used by a denning bear during the winter and early spring seasons, and "candidate" den trees are defined in the final rule as bald cypress and tupelo gum with visible cavities having a dbh of 36 inches or greater in or along rivers, lakes, streams, bayous, sloughs, or other waterbodies. Results of recent research involving Louisiana black bears indicate that they use virtually any species of tree for a den site, if it is large enough and has a cavity as described above (FWS, 2006b).

No Louisiana black bear were observed during the field surveys, and no candidate or actual denning trees were identified along the proposed Project route. Furthermore, Gulf South would implement any agency-recommended measures to mitigate potential impacts to Louisiana black bears should they be encountered during construction. Therefore, we have determined that the proposed Project is not likely to adversely affect the Louisiana black bear.

3.7.1.6 Gulf Sturgeon

The Gulf sturgeon is a large fish known to reach lengths in excess of 8 feet and weights over 200 pounds. Historically, this species occurred from the Mississippi River to the Suwannee River in Florida. In Mississippi, it was found in the Pearl, Bogue Chitto, and Pascagoula River drainages and could occur in any of the larger tributaries (MNHP, 2006).

The Gulf sturgeon is anadromous, spending much of its time in saltwater, but returning to freshwater to spawn. Mature adults enter freshwater in the spring to spawn and remain until autumn. They have not been recorded feeding while in freshwater and thus only grow in the marine environment. Spawning of Gulf sturgeon is not well documented, but the presence of larvae in April and May indicate a spring spawning cycle. Ultrasonically tagged females apparently choose stream areas with a rocky substrate in the immediate vicinity of springs for spawning.

Based on consultations with and recommendations from the FWS, the Chickasawhay, Leaf, and Strong Rivers are believed to potentially support the Gulf sturgeon. Furthermore, the proposed Project traverses the Chickasawhay River within the officially-designated Gulf sturgeon critical habitat. Gulf South has indicated that the Chickasawhay, Leaf, and Strong Rivers would be traversed using HDD technologies. In the event of a frac-out, Gulf South's HDD Plan would be implemented to minimize any impact to the species. Additionally, the drilling fluid that would be used by Gulf South would be non-toxic. Given the proposed crossing methods of the Chickasawhay, Leaf, and Strong Rivers, and the HDD Plan, we have determined that construction and operation of the proposed Project is not likely to adversely affect the Gulf sturgeon.

3.7.1.7 Bald Eagle

The bald eagle is listed as a federally threatened species. However, effective 8 August 2007, the bald eagle will no longer be federally listed as threatened in the lower 48 states. However, protection provided to the bald eagle under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA) will continue to remain in place after the species is delisted. The BGEPA and MBTA, known collectively as the Eagle Act prohibit disturbance of eagles, their nests, or their eggs.

The bald eagle is a large carnivorous bird whose range covers virtually all of North America. Bald eagles are large and distinctive birds, with wingspans of close to 7 feet and a body length of approximately 35 inches. Adult bald eagles have white heads and tails, yellow bills, feet, and legs, and dark brown bodies. Immature birds are brown and lack the white head and tail of the adults. Bald eagles are opportunistic foragers, and their diet varies based on prey species available. They prefer fish but would eat a great variety of mammals, amphibians, crustaceans, and birds, including many species of waterfowl. They frequently scavenge and are often seen with vultures feeding on carcasses.

Bald eagles are relatively uncommon nesters in the area traversed by the proposed Project. They generally construct extremely large nests of sticks in the tops of tall trees, often selecting the tallest tree in a given area as a preferred site. Typically, the nest trees selected are in a riparian area, along a major river or near a lake. The nests are very conspicuous and are often reused for years and in some cases for generations. The southern bald eagle is a winter nester, with most nesting and rearing in the Project vicinity occurring from October to May.

No individual bald eagles or bald eagle nests have been identified within the proposed Project area. Based on bald eagle habitat requirements, surveys conducted by Gulf South, the location of the proposed facilities, the absence of bald eagle sightings, the lack of suitable habitat, and our consultations with the FWS, we have determined that construction and operation of the proposed Project is not likely to adversely affect the bald eagle.

3.7.1.8 Wood Stork

The wood stork is a large, tall bird with a wingspan of up to 61 inches and a long, down-curved beak that averages 40 inches long. The wood stork has a very large range spanning from the southeastern U.S. to South America.

The wood stork is a non-migratory species that is chiefly found in areas containing freshwater marshes, swamps, lagoons, ponds, and flooded fields capable of supporting various fish species and other small animals commonly associated with aquatic habitats. The wood stork typically nests in the tops of large cypress, mangrove, or dead hardwood trees. Nesting is directly tied to abundant food sources, regardless of season (Nature Serve, 2006).

In Choctaw County, Alabama, it is believed that the wood stork occurs primarily in the eastern portion of the county and is unlikely to be found in the proposed Project area (Felder, 2006).

Based on wood stork habitat requirements, surveys conducted by Gulf South, the location of the proposed facilities, the absence of wood stork sightings, the lack of suitable habitat, and our consultations with the FWS, we have determined that construction and operation of the proposed Project is not likely to adversely affect the wood stork.

3.7.1.9 Red-Cockaded Woodpecker

The red-cockaded woodpecker (RCW) requires open pine woodlands and savannahs with large, old pines for "cluster" nesting and roosting habitat. RCWs are generally found in colonies that consist of a breeding pair and one or more helpers. The helpers are generally young from previous broods that assist the breeding adults in feeding the young and in defending the territory against encroachment by other woodpeckers.

Large, old pines are preferred by the RCW as cavity trees and must be in open stands with little or no hardwood midstory and few or no overstory hardwoods. As a general rule, the preferred trees are quite old, often in excess of 100 years old. They have significant crown volume and a dbh of 15 inches or greater, although smaller and younger trees are occasionally used. Due to their longevity and tendency to develop red heart rot as they age, RCWs prefer longleaf pines (*Pinus palustris*) as cavity trees. They also use short-leaf and slash pines (*Pinus elliotii*) with some frequency. Loblolly pines are used less often due to their relatively short lifespan.

RCWs also require abundant foraging habitat consisting of mature pines with an open canopy, low densities of small pines, little or no hardwood or pine midstory, few or no overstory hardwoods, and abundant native bunchgrass and groundcover. Fire suppression (resulting in hardwood encroachment) and lack of cavity trees are the foremost factors limiting suitable nesting habitat. Forest fragmentation is another primary factor directly limiting potential breeding groups because of the resultant isolation of those groups, disrupted dispersal of their helpers, and failure to replace breeders; consequently, areas of contiguous habitat represent preferred foraging habitat.

Consultations with the FWS have indicated that RCW habitat within Jasper and Smith Counties, Mississippi, is limited to lands contained within national forests, and that no known suitable habitat exists within the proposed Project area (Felder, 2006). Observations made during Gulf South field surveys confirmed that forested habitats traversed by the proposed Project contain large percentages of hardwood species, or contain a dense understory layer, thus being unsuitable for RCW habitat.

No RCWs were observed during field surveys along the proposed Project route, and most habitat in the proposed Project area is characterized as unsuitable for nesting/roosting and foraging. The majority of the pine plantations that would be crossed by the proposed Project consists of young, dense pine or older stands of pine in fire-suppressed forests, both of which contain too much midstory vegetation to be considered suitable for RCWs. Based on the lack of suitable RCW habitat and our consultation with the FWS, we have determined that construction and operation of the proposed Project would not affect RCWs.

3.7.1.10 Inflated Heelsplitter

The inflated heelsplitter is a small oval mollusk that may reach up to 5.5 inches as an adult. The shell is brown to black, and the inside of the shell is pink to purple. The inflated heelsplitter is known to occupy soft, stable substrata with slow to moderate current. It occurs in sand, mud, silt, and sandy gravel.

The inflated heelsplitter is historically found in the Amite and Tangipahoa Rivers, Louisiana; the Pearl River, Mississippi; and the Tombigbee, Black Warrior, Alabama, and Coosa Rivers, Alabama. The current distribution in Alabama is limited to the Tombigbee and Black Warrior Rivers (Nature Serve, 2006).

Because the current range of the inflated heelsplitter is outside of the proposed Project area, we have determined that construction and operation of the proposed Project would result in no affect to this species.

3.7.2 Special Status Species

In addition to federally listed species, other special status species may also occur within the vicinity of the proposed Project facilities. Special status species include state-listed endangered, threatened, imperiled, or rare species, as well as other species of concern identified through consultation with MNHP, MDWF, LDWF, and ADCNR.

State-Listed and Rare Species

The MNHP, MDWFP, LDWF, and ADCNR have identified 46 species listed as either endangered or threatened that potentially occur within the proposed Project area. These species are listed in Table 3.7.2-1. No state-listed species were identified during field surveys conducted by Gulf South; however, suitable habitat for many of these species was observed within affected work areas. Of these 46 species, 10 (bald eagle, wood stork, Gulf sturgeon, inflated heelsplitter, Louisiana black bear, gopher tortoise, yellow blotched map turtle, eastern indigo snake, RCW, and ringed map turtle) are discussed above and are not discussed in this section. As discussed in Section 3.7.1, the ADCNR was not able to make a determination as to which threatened or endangered species may potentially occur within the proposed Project area; however, a list of threatened or endangered species for Choctaw County, Alabama was provided.

In general terms, impacts to state listed species would be similar to those described above for federally listed species. Birds could be affected by the loss of nesting or foraging habitat during clearing for the proposed Project, and they could also be disturbed by human activity. Fish and aquatic invertebrates could be affected by open-cut construction methods through the alteration of stream habitats along with associated increases of turbidity and sediment load. Although larger streams and rivers would typically be crossed by HDD methods that would avoid the impacts associated with open-cut crossings, frac-outs could occur resulting in turbidity and the deposition of drilling mud. Terrestrial wildlife, such as mammals and reptiles, could be subject to mortality or displacement during clearing and could lose habitat along the right-of-way.

TABLE 3.7.2-1
State Listed and Rare Species Potentially Occurring in the Proposed Southeast Expansion Project Area[a]

Species	Alabama Status/Rank[b]	Mississippi Status/Rank[b]	Louisiana Status/Rank[b]	Habitat
Amphibians				
Red salamander (*Pseudotriton rubber)*	--	S3	--	Cold, clear, rocky streams and springs in wooded or open areas. Adults occur in or near water in leaf litter and under rocks and in crevices and burrows near water. Adults sometimes disperse into woods. Eggs are attached to underside of rocks in water. Larvae occur in still pools.
Bay Springs salamander (*Plethodon ainsworthi)*	--	SH	--	Prefers hardwood forests with fallen logs or debris. May occur in springhead litter.
Birds				
Bachman's sparrow (*Aimophila aestivalis)*	S3	--	S3	Habitats include dry, open pine (southern states) or oak woods (e.g., western portion of range) with an undercover of grasses and shrubs, hillsides with patchy brushy areas, overgrown fields with thickets and brambles, grassy orchards, and large clear-cuts (usually at least 20 hectares). In the southeastern U.S., Coastal Plain breeding habitat usually is open pine woods with thick cover of grasses or saw palmetto.
Bewick's wren (*Thryomanes bewickii*)	SH	S2/E	--	Brushy areas, thickets and scrub in open country, open and riparian woodland, and chaparral. More commonly in arid regions but locally also in humid areas (subtropical and temperate zones), including country towns and farms.
Black-crowned night-heron (*Nyycticorax nyycticorax*)	--	S3?	--	Marshes, swamps, wooded streams, mangroves, shores of lakes, ponds, lagoons; saltwater, brackish, and freshwater situations. Roosts by day in mangroves or swampy woodlands.
Cerulean warbler (*Dendroica cerulean*)	S1	--	S1	Habitat is frequently described as mature deciduous forest, particularly in floodplains or other mesic conditions.
Henslow's sparrow (*Ammodramus henslowii*)	S2	--	--	Open fields and meadows with grass interspersed with weeds or shrubby vegetation, especially in damp or low-lying areas, adjacent to salt marsh in some areas. Uses unmowed hayfields (abandoned if cut). Found in a variety of habitats that contain tall, dense grass and herbaceous vegetation.
White ibis (*Eudocimus albus*)	S3	S3	--	Various saltwater and freshwater habitats: marshes, mangroves, lagoons, lakes, marsh prairie, pasture, coastal swamps.
Fish				
Alabama shad (*Alosa alabamae*)	S2	S1	--	Anadromous; adults live in saltwater and migrate into medium to large coastal rivers to spawn.
Crystal darter (*Crystallaria asprella*)	S3	S1/E	S2S3	Small to medium rivers with expanses of clean sand and gravel. Usually in water more than 60 centimeters (cm) deep with strong current.
Frecklebelly madtom (*Noturus munitus*)	S2	S2/E	--	Chiefly in rocky riffles, rapids, and runs of medium to large rivers. This small fish's movements are impeded by dams and impoundments.
Pearl darter (*Percina aurora*)	--	S1/E	--	Pearl darters have been collected from gravel riffles and rock outcrops; deep runs over gravel and sand pools below shallow riffles; swift (90 cm/second), shallow water over firm gravel and cobble in mid-river channels; and swift water near brush piles.
Invertebrates				
Natchez stonefly (*Alloperla natchez*)	--	S2	--	Members of this genus and family are found in cold lotic habitats and are very sensitive to eutrophication.
Prairie mole cricket (*Gryllotalpa major*)	--	SH	--	Inhabitant of prairie soil ranging from mesic to dry-mesic; southern tallgrass prairie of the United States. Not found in pastures. Some individuals are found in mixed grass prairie, although these sites may not be optimal habitat as much as habitat that is both acceptable and available.

TABLE 3.7.2-1
State Listed and Rare Species Potentially Occurring in the Proposed Southeast Expansion Project Area[a]

Species	Alabama Status/Rank[b]	Mississippi Status/Rank[b]	Louisiana Status/Rank[b]	Habitat
Mussels				
Alabama hickorynut (*Obovaria unicolor*)	S1	S3	--	Sand/gravel substrates in moderately flowing water.
Black sandshell (*Ligumia recta*)	S1	S2	S1	Occur chiefly in flow refuges, or relatively stable areas that displayed little movement of particles during flood events.
Spike (*Elliptio dilatata*)	--	S1/E	S2S3	Large rivers or creeks, medium rivers, and springs/spring brooks.
Delicate spike (*Elliptio arctata*)	S2	S1/E	--	Large rivers and creeks of low gradient. Medium rivers with moderate gradient and riffle.
Mississippi pigtoe (*Pleurobema beadleianum*)	--	S3?	--	Freshwater.
Pyramid pigtoe (*Pleurobema rubrum*)	--	S1/E	S2	Inhabits large rivers but may occur in medium-sized lotic environments. It tends to occupy riffles or shoals in relatively shallow water and coarse-particle substrates, along sand bars, or in deep water (>4 meters) with mud and sand bottoms.
Ebonyshell (*Fusconaia ebena*)	--	--	S3	Freshwater.
Snails				
Silty hornsnail (*Pleurocera canaliculata*)	--	--	S2	Freshwater.
Mammals				
Oldfield mouse (*Peromyscus polionotus*)	--	S2	--	Favors dry, sandy fields and beaches with grass/shrub cover.
Plants				
American Bladdernut (*Staphylea trifolia*)	--	S3	--	Grows in average, dry to medium wet, well-drained soils in part shade to full shade. Tolerates wide variety of soils. Prefers moist soils.
Black-stem spleenwort (*Asplenium resiliens*)	--	S1	--	In semi-shade or full sun in well-drained calcareous substrates; often in cedar glades or on limestone cliffs.
Canada wild-ginger (*Asarum canadense*)	--	S2S3	--	Found in upland rich woods, typically higher pH soils and associated with calcareous rock outcrops or rich soils; it is also found in high nutrient-rich coves in mountains. This species is occasionally found in regenerating deciduous woodlands.
Common hoptree (*Ptelea trifoliate*)	--	S3S4	--	Prefers well-drained soil, full sun or shade, and moist soil.
Crested coral-root (*Hexalectris spicata*)	--	S2	--	Calcareous sandy or organic soils in oak, hickory, or conifer woods.
Crested fringed orchid (*Platanthera cristata*)	--	S3	--	Terrestrial in moist, open, acidic bogs, prairies, pine woods, and roadsides.
Needle palm (*Rhapidophyllum hystrix*)	--	S3	--	Prefers fairly moist, well-drained soils with abundant organic matter but is very adaptable to less than ideal conditions.
Smoother sweet-cicely (*Osmorhiza longistylis*)	--	S3	--	Rich, often alluvial woods and thickets. Woods often along the sides of streams.
Purple coneflower (*Echinacea purpurea*)	--	S3, S4	S2	Medium wet, well-drained soil in full sun.
Yellow water-crowfoot (*Ranunculus flabellaris*)	--	--	S1	Occurs mainly in wetlands.
Yellowleaf tinker's-weed (*Triosteum angustifolium*)	--	--	S2	Open prairies and near the edge of forests.
Reptiles				
American alligator (*Alligator mississippiensis*)	--	S4	--	Fresh and brackish marshes, ponds, lakes, rivers, swamps, bayous, large spring runs.

TABLE 3.7.2-1
State Listed and Rare Species Potentially Occurring in the Proposed Southeast Expansion Project Area[a]

Species	Alabama Status/Rank[b]	Mississippi Status/Rank[b]	Louisiana Status/Rank[b]	Habitat
Southern hognose snake (*Heterodon simus*)	SH	SH/E	--	Inhabits open, xeric habitats with well-drained, sandy or sandy-loam soils such as sand ridges, stabilized coastal sand dunes, pine flatwoods, mixed oak-pine woodlands and forests, scrub oak woods, and oak hammocks; also old fields and river floodplains. This snake spends considerable time burrowed in the soil.

a In Alabama, Mississippi, and Louisiana, the respective Natural Heritage Commissions have ranked species according to their imperiled status.
b Rank S1 – Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).
Rank S2 – Imperiled in the state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it vulnerable to extirpation.
Rank S3 – Rare or uncommon in the state (21 to 100 known populations).
Rank S4 – Apparently secure in the state (101 to 1,000 known populations).
Rank SH – Historical occurrence; possibly extinct.
Rank E – A species that is in danger of extinction throughout all or a significant portion of its range.
"?" indicates status uncertain.
Source: LDWF, 2006; MDWFP, 2006; MNHP, 2002; ADCNR, 2006; Nature Serve, 2006

Gulf South has indicated that it would continue to consult with the LDWF, MDWFP, and the ADCNR to determine whether additional field surveys are warranted for any of the species listed in Table 3.7.2-1 and, if required, develop mitigation measures to avoid or minimize potential impacts to theose species. Because thoese consultations have not yet been completed, **we recommend that:**

- **Gulf South should continue to consult with the LDWF, the MDWFP, and the ADCNR to determine the need for surveys or mitigation that would substantially minimize or avoid potential impacts to state-listed species. Gulf South should file copies of the results of these consultations, as well as any associated survey reports and mitigation plans, with the Secretary <u>prior to construction</u>.**

3.8 LAND USE, RECREATION AND SPECIAL INTEREST AREAS, AND VISUAL RESOURCES

3.8.1 General Land Use Types

In this section, we further quantify the land requirements for construction and operation of the proposed Project, describe current land use types, and evaluate the significance of Project-related impacts to those lands, as well as to specially designated areas, transportation corridors, visually sensitive areas, and hazardous waste sites.

There are 10 land use types crossed by the proposed pipeline and affected by the proposed aboveground facility sites: agricultural, pine plantation, upland forest, pasture, open land, open water, residential land, industrial/commercial land, wetlands, and other roads. Table 3.8.1-1 identifies the amount of acreage by land use type that would be affected by construction and operation of the proposed Project.

Construction of the proposed Project would affect approximately 1,726.5 acres (Table 3.8.1-1). Approximately 1,240.3 acres (72 percent) of that acreage would be contained within the pipeline construction right-of-way. Construction of aboveground facilities would affect approximately 146.2 acres (8 percent), and the remaining 340.0 acres (20 percent) would be affected by the use of ATWSs, access roads, pipe storage, and contractor yards. Approximately 646.6 acres (37 percent) of the

land that would be affected during construction is currently characterized as upland forest, 578.8 acres (34 percent) would be pine plantation, and 175.0 acres (10 percent) would be open land. The remaining cover types reported in Table 3.8.1-1 collectively represent less than 20 percent of the proposed construction acreage. Following construction, lands temporarily used for construction (pipe storage and contractor yards, access roads, and ATWSs) would be able to revert to their original use type.

As described in Section 2.0, the proposed Project would be collocated with existing pipeline rights-of-way for approximately 72.7 miles (approximately 66 percent) of its length. Gulf South proposes to parallel existing pipeline or utility corridors to the extent practical. This collocation would be adjacent to and abut a Denbury Resources (Denbury) pipeline for 0.2 mile (MP 30.3 to MP 30.5), a Crosstex Mississippi (Crosstex) pipeline for approximately 39.4 miles (MP 38.3 to MP 77.7), and a Transco pipeline for approximately 33.1 miles (MP 77.7 to MP 110.8). For the portion of the project paralleling existing foreign pipelines, Gulf South's new permanent right-of-way would be 60 feet wide, abutting the adjacent existing right-of-way. The additional 60 feet (40 feet in wetlands) of temporary construction right-of-way would be located on the opposite side of the new permanent right-of-way from the existing utility corridor.

During operation of the proposed Project, the permanent pipeline right-of-way, aboveground facilities and permanent access roads would affect approximately 857.6 acres. About 39 percent of the land that would be affected during operation is currently classified as upland forest, 33 percent is pine plantation, and 11 percent is open land. The remaining land use types collectively represent less than 20 percent of the acreage required during operation.

Pipeline Facilities

Approximately 1,240.3 acres of land would be impacted by construction of the proposed pipeline. Approximately 77 percent of this acreage would consist of pine plantation and upland forest. Open land, wetlands, pasture, industrial/commercial, residential, other/roads, agricultural, and open water accounts for the additional 23 percent of this acreage.

Operation of the proposed pipeline would permanently affect approximately 731.4 acres of land. Similar to the construction right-of-way requirements, approximately 78 percent of the land that would be affected during operation is currently classified as upland forest and pine plantation, while open land, wetlands, industrial/commercial, residential, agricultural, and open water make up the remaining 22 percent.

Aboveground Facilities

In addition to lands affected by construction of the proposed pipeline, construction of the proposed aboveground facilities would affect approximately 146.2 acres of land while operation would affect approximately 119.2 acres. Table 3.8.1-1 provides data regarding the land cover types that would be affected by construction and operation of the proposed aboveground facilities. Of the 119.2 acres required for operation of the aboveground facilities, approximately 29 percent would be upland forest, while 58 percent would be agricultural land and 10 percent would be pine plantation. Construction and operation of the proposed aboveground facilities would result in a conversion of those lands to a commercial/industrial cover type for the life of the proposed Project.

TABLE 3.8.1-1
Acres Potentially Impacted by the Proposed Southeast Expansion Project

		Affected Land Use/Land Cover (acres)[a]							
		Agricultural		Pine Plantation		Upland Forest		Pasture	
	County/Parish	Const	Oper	Const	Oper	Const	Oper	Const	Oper
Pipeline Facilities[b]									
	Simpson, MS	1.0	0.6	87.1	52.3	165.3	100.5	14.5	8.6
	Smith, MS	3.9	2.4	80.0	48.3	94.6	59.0	11.3	7.0
	Jasper, MS	0.8	0.5	66.2	40.2	142.8	88.7	19.5	11.6
	Clarke, MS	2.8	2.2	178.0	105.6	90.2	53.0	6.2	3.8
	Choctaw, AL	0.0	0.0	47.8	25.3	0.0	0.0	0.0	0.0
Pipeline Facilities Subtotal		**8.5**	**5.7**	**459.1**	**271.7**	**492.9**	**301.2**	**51.5**	**31.0**
Aboveground Facilities[c]									
Delhi Compressor Station	Richland, LA	69.5	69.5	0.0	0.0	0.0	0.0	0.0	0.0
Harrisville Compressor Station	Simpson, MS	0.0	0.0	0.0	0.0	15.3	15.3	0.0	0.0
Destin Compressor Station	Clarke, MS	0.0	0.0	17.2	11.7	17.2	11.6	0.0	0.0
CenterPoint Energy M/R Station	Richland, LA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Southern Natural M/R Station	Smith, MS	0.0	0.0	0.0	0.0	3.5	0.9	0.0	0.0
Tennessee Gas M/R Station	Jasper, MS	0.0	0.0	0.0	0.0	3.2	0.8	0.0	0.0
Destin M/R Station	Clarke, MS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transco M/R Station	Choctaw, AL	0.0	0.0	0.0	0.0	11.9	6.0	0.0	0.0
Valves and Other Facilities	Various	0.0	0.0	1.0	0.0	3.3	0.3	0.0	0.0
Aboveground Facilities Subtotal		**69.5**	**69.5**	**18.2**	**11.7**	**54.4**	**34.9**	**0.0**	**0.0**
Extra Work Areas[b]									
Pipe Storage and Contractor Yards	Various	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Access Roads[d]	Various	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
ATWSs	Various	1.9	0.0	101.5	0.0	98.9	0.0	4.8	0.0
Extra Work Areas Subtotal		**1.9**	**0.0**	**101.5**	**0.0**	**99.3**	**0.0**	**4.8**	**0.0**
Total		**79.9**	**75.2**	**578.8**	**283.4**	**646.6**	**336.1**	**56.3**	**31.0**

Notes:
Const = Construction Impacts
Oper = Operation Impacts. Permanent impacts are based on Gulf South's proposed 60-foot wide permanent right-of-way; however, we are recommending that Gulf South's permanent right-of-way be limited to a width of 50 feet.

a Agricultural Land – Active cropland, pasture, and/or hayfields
Residential Land – Yards, subdivisions, mobile home parks, and planned developments
Commercial/Industrial Land – Power or utility stations, manufacturing or industrial plants, commercial or retail facilities, and roads

b Construction acreage requirements for pipeline facilities includes ATWSs. Table G-1 of Appendix G provides a complete, itemized list of extra work areas and associated impacts.

c Minor land requirements associated with mainline valves would be contained within the compressor station sites and the construction and permanent pipeline rights-of-way and are thus already included in the acreage estimates for those facilities.

d Existing access roads that would be upgraded or otherwise modified in association with construction of the proposed Project traverse a variety of land uses and cover types. Land requirements of new and improved access roads based on a typical construction width of 40 feet. Table G-2 of Appendix G provides a complete, itemized list of construction access roads.

TABLE 3.8.1-1 (continued)
Acres Potentially Impacted by the Proposed Southeast Expansion Project

		Affected Land Use/Land Cover (acres)[a]							
		Open Land		Open Water		Residential		Industrial/ Commercial	
	County/Parish	Const	Oper	Const	Oper	Const	Oper	Const	Oper
Pipeline Facilities[b]									
	Simpson, MS	38.7	23.3	0.0	0.0	2.5	1.3	2.1	1.8
	Smith, MS	24.4	14.9	0.0	0.0	0.3	0.1	1.0	0.8
	Jasper, MS	36.9	22.3	0.0	0.0	0.9	0.5	3.5	2.5
	Clarke, MS	24.1	18.0	0.0	0.0	1.6	1.0	1.1	1.0
	Choctaw, AL	22.3	16.9	0.0	0.0	0.0	0.0	0.0	0.0
Pipeline Facilities Subtotal		**146.4**	**95.4**	**0.0**	**0.0**	**5.3**	**2.9**	**7.7**	**6.1**
Aboveground Facilities[c]									
Delhi Compressor Station	Richland, LA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harrisville Compressor Station	Simpson, MS	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Destin Compressor Station	Clarke, MS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CenterPoint Energy M/R Station	Richland, LA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Southern Natural M/R Station	Smith, MS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee Gas M/R Station	Jasper, MS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Destin M/R Station	Clarke, MS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transco M/R Station	Choctaw, AL	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Valves and Other Facilities	Various	1.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0
Aboveground Facilities Subtotal		**3.9**	**3.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**	**0.0**
Extra Work Areas[b]									
Pipe Storage and Contractor Yards	Various	0.0	0.0	0.0	0.0	0.0	0.0	41.0	0.0
Access Roads[d]	Various	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATWSs	Various	23.9	0.0	0.0	0.0	1.6	0.0	1.3	0.0
Extra Work Areas Subtotal		**24.7**	**0.0**	**0.0**	**0.0**	**1.6**	**0.0**	**42.3**	**0.0**
Total		**175.0**	**98.6**	**0.0**	**0.0**	**6.9**	**2.9**	**50.3**	**6.1**

Notes:
Const = Construction Impacts
Oper = Operation Impacts. Permanent impacts are based on Gulf South's proposed 60-foot wide permanent right-of-way; however, we are recommending that Gulf South's permanent right-of-way be limited to a width of 50 feet.

a Open Land – Non-forested lands, maintained utility rights-of-way, and shrub-scrub wetland
Forest – Tracts of upland or wetland forest
Pine Plantation – Planted/harvested pine plantation forest

b Construction acreage requirements for pipeline facilities includes temporary ATWSs. Appendix G provides a complete, itemized list of extra work areas and associated impacts.

c Minor land requirements associated with mainline valves would be contained within the compressor station sites and the construction and permanent pipeline rights-of-way and are thus already included in the acreage estimates for those facilities.

d Existing access roads that would be upgraded or otherwise modified in association with construction of the proposed Project traverse a variety of land uses and cover types. Land requirements of new and improved access roads based on a typical construction width of 40 feet. Appendix G provides a complete, itemized list of construction access roads.

TABLE 3.8.1-1 (continued)
Acres Potentially Impacted by the Proposed Southeast Expansion Project

		Affected Land Use/Land Cover (acres)[a]					
		Wetlands		Other/Roads		Total	
	County/Parish	Const	Oper[e]	Const	Oper	Const	Oper
Pipeline Facilities[b]							
	Simpson, MS	19.0	4.6	0.0	0.0	330.2	193.0
	Smith, MS	11.9	4.5	0.0	0.0	227.4	137.0
	Jasper, MS	19.3	4.9	0.0	0.0	289.9	171.2
	Clarke, MS	15.7	2.9	0.0	0.0	319.7	187.5
	Choctaw, AL	3.0	0.5	0.0	0.0	73.1	42.7
Pipeline Facilities Subtotal		**68.9**	**17.4**	**0.0**	**0.0**	**1240.3**	**731.4**
Aboveground Facilities[c]							
Delhi Compressor Station	Richland, LA	0.0	0.0	0.0	0.0	69.5	69.5
Harrisville Compressor Station	Simpson, MS	0.0	0.0	0.0	0.0	16.2	16.2
Destin Compressor Station	Clarke, MS	0.0	0.0	0.0	0.0	34.4	23.3
CenterPoint Energy M/R Station	Richland, LA	0.0	0.0	0.0	0.0	0.0	0.0
Southern Natural M/R Station	Smith, MS	0.0	0.0	0.0	0.0	3.5	0.9
Tennessee Gas M/R Station	Jasper, MS	0.0	0.0	0.0	0.0	3.2	0.8
Destin M/R Station	Clarke, MS	0.0	0.0	0.0	0.0	0.0	0.0
Transco M/R Station	Choctaw, AL	0.0	0.0	0.0	0.0	13.9	8.0
Valves and Other Facilities	Various	0.0	0.0	0.0	0.0	5.5	0.5
Aboveground Facilities Subtotal		**0.0**	**0.0**	**0.0**	**0.0**	**146.2**	**119.2**
Extra Work Areas[b]							
Pipe Storage and Contractor Yards	Various	0.0	0.0	0.0	0.0	41.0	0.0
Access Roads[d]	Various	0.0	0.0	57.1	7.0	58.3	7.0
ATWSs	Various	6.8	0.0	0.0	0.0	240.7	0.0
Extra Work Areas Subtotal		**6.8**	**0.0**	**57.1**	**7.0**	**340.0**	**7.0**
Total		**75.7**	**17.4**	**57.1**	**7.0**	**1726.5**	**857.6**

Notes:
Const = Construction Impacts
Oper = Operation Impacts. Permanent impacts are based on Gulf South's proposed 60-foot wide permanent right-of-way; however, we are recommending that Gulf South's permanent right-of-way be limited to a width of 50 feet.
a Open Land – Non-forested lands, maintained utility rights-of-way, and shrub-scrub wetland
Forest – Tracts of upland or wetland forest
Pine Plantation – Planted/harvested pine plantation forest
b Construction acreage requirements for pipeline facilities includes temporary ATWSs. Appendix G provides a complete, itemized list of extra work areas and associated impacts.
c Minor land requirements associated with mainline valves would be contained within the compressor station sites and the construction and permanent pipeline rights-of-way and are thus already included in the acreage estimates for those facilities.
d Existing access roads that would be upgraded or otherwise modified in association with construction of the proposed Project traverse a variety of land uses and cover types. Land requirements of new and improved access roads based on a typical construction width of 40 feet. Appendix G provides a complete, itemized list of construction access roads.
e Operational wetland impacts only include impacts to PFO wetlands, as PEM and PSS wetlands would be allowed to return to pre-construction conditions.

Access Roads

As described in Section 2.2.3.3, construction of the proposed pipeline right-of-way would require use of existing public and private roadways to gain access during construction and operation of the proposed Project. Where feasible, Gulf South would use existing public roadways, existing private roadways and the pipeline right-of-way itself to gain access during construction and operation of the proposed Project. Gulf South indicates that only three newly constructed or upgraded access roads would be permanently maintained during operations. The remaining access roads would be allowed to revert to their preconstruction uses. Gulf South has indicated that construction of the proposed pipeline would require the use of 138 access roads of varying lengths and construction. Of the 138 access roads, 91 would be unmodified existing roads, and 47 (comprising approximately 34.8 miles of road) would be new or upgraded roads, of which 44 roads would be for temporary use, while three roads would be for permanent use (see Appendix G). Gulf South would upgrade access roads by placing gravel for stability, grading, replacing or installing culverts, clearing overhead vegetation, or by making minor widenings at sharp turns to facilitate passage by pipe trucks.

Pipe Storage and Contractor Yards

Gulf South proposes to use three pipe storage and contractor yards during construction, temporarily affecting approximately 41.0 acres of land (Table 3.8.1-1). Each of the identified pipe storage and contractor yards would consist of warehouses or open lots located in previously disturbed areas.

3.8.2 Land Ownership and Easement Requirements

Prior to initiating construction, Gulf South would secure an easement to convey both temporary (for construction) and permanent (for operation) rights-of-way. The easement acquisition process is designed to provide fair compensation to the landowners for the right to use the property for pipeline construction and operation. During the easement acquisition process, Gulf South would compensate landowners for loss of value to specific parcels. The easement agreement between the company and landowner typically specifies compensation for loss of use during construction, loss of nonrenewable or other resources, damage to property during construction, and allowable uses of the permanent right-of-way after construction. During negotiations, Gulf South and affected landowners would address the following:

- Allowable uses within the right-of-way.
- Mechanisms required to allow the pipeline to be traversed by heavy equipment such as log skidders.
- Minor route adjustments to accommodate landowner needs (provided that the route adjustments do not affect environmentally sensitive areas or other non-consenting landowners).

If an easement cannot be negotiated with a landowner and the proposed Project has been certificated by the FERC, Gulf South could use the right of eminent domain granted to it under Section 7(h) of the NGA and the procedure set forth under the Federal Rules of Civil Procedure (Rule 71A) to obtain the right-of-way and extra work areas. Although Gulf South would compensate the landowner for the right-of-way and for any damages incurred during construction, a court would determine the level of compensation if a Certificate were issued. In either case, the landowner would be compensated for the use of the land. Eminent domain would not apply to lands under federal ownership.

3.8.3 General Impacts and Mitigation

The general impacts to land use associated with construction of the proposed Project would be a function of the construction methods employed, the restoration actions implemented once construction has been completed, the nature of the land cover type affected before construction, and the allowable use of the land following construction. Section 2.3 provides a detailed discussion of the proposed construction methods and post-construction restoration actions for the proposed Project.

Construction

Following construction, areas outside the permanent pipeline right-of-way and other temporary work areas would be graded, seeded, or otherwise restored and would be allowed to revert to existing conditions, except where individual landowner agreements negotiated during the easement acquisition process dictate other acceptable restoration measures. As a result, land use impacts to these areas would be temporary. Because non-woody vegetation would be expected to return to pre-construction conditions within two growing seasons, impacts to lands currently classified as agricultural, pasture, open land, residential, or industrial/commercial and located outside the permanent pipeline right-of-way would be short-term and minor.

Trees cleared within the temporary construction rights-of-way would be allowed to revert to pre-construction conditions and in some cases may be replanted. This process would take many years, with the duration of recovery dependent on the types and ages of trees removed. As a result, impacts to areas classified as PFO, forest, and pine plantation lands that are located outside the permanent right-of-way would be long-term. Additional discussion of general impacts and mitigation measures that would be implemented to minimize impacts to forested areas is provided in Sections 3.4 and 3.5.

Operation

Permanent land use changes would occur to those lands contained within the permanent pipeline right-of-way where reversion to the pre-construction cover type would not be compatible with operation of the proposed Project facilities. Activities typically not allowed in the permanent pipeline right-of-way would include aboveground construction, below ground construction, and the growth, planting, or cultivation of trees. Upland forest and pine plantation land covers and uses therefore would be precluded from the permanent pipeline right-of-way. Allowable land uses generally permitted within the permanent right-of-way would include use of farming equipment, cultivation of row crops, and utilization as pastureland. Permanent changes also would be associated with the proposed aboveground facilities and those access roads maintained during operations, as acreage required for these facilities would be converted to a commercial/industrial cover type for the life of the Project. Gulf South indicates that only three newly constructed or upgraded access roads associated with the aboveground facilities described above would be permanently maintained during operations.

Permanent maintenance of rights-of-way relative to converted land uses and aboveground facilities would have a permanent, lasting affect for at least the life of the proposed Project. Overall, despite the permanent conversion of some land use types in the permanent rights-of-way and at aboveground facilities, we believe the overall Project impact would not be significant given the limited acreage involved.

3.8.3.1 Land Use Type, Specific Impacts, and Mitigation

Land use types including open land, open water, industrial/commercial lands, and other lands would not be converted by construction or operation of the proposed Project. Wetlands would be affected

by the proposed Project, and these impacts are discussed in detail in Section 3.4. Other land use types, including agriculture, forested areas, pastures, and residential lands would be subject to impacts or conversion of land use and are discussed in more detail below.

Agriculture, Timber, and Pasture Lands

Construction could affect the productivity of agricultural, timber (upland forest and pine plantation), and pasture lands within the construction and permanent pipeline rights-of-way. During the Pre-filing and scoping periods, we received comments expressing concern for potential proposed Project-related effects to farming, as well as pasture and timber lands. Gulf South has proposed to accomplish pipeline construction between September and December 2007, which encompasses typical growing seasons. Thus, Project-related crop losses could occur. As applicable, Gulf South would work with landowners prior to construction to establish compensation agreements for crop damages and for loss of growing time. In accordance with its plans, Gulf South would implement construction procedures in agricultural areas to minimize potential impacts and restore the right-of-way to approximate pre-construction conditions (see Sections 2.3 and 3.2). Gulf South's plans require them to conduct follow-up inspections of the disturbed areas after the first and second growing seasons to determine if revegetation was successful. In agricultural areas, revegetation would be considered successful if crop yields are similar to adjacent undisturbed portions of the same field (see Section 3.2).

Gulf South would implement special construction and monitoring procedures through agricultural lands, including pasture, to minimize adverse effects and ensure proper restoration. However, construction through pasture could temporarily affect some livestock operations, and some landowners could incur additional costs for supplemental livestock feed. Compensation for such losses would be accomplished through the easement negotiation process. To ensure the safety of livestock during construction, Gulf South would either construct temporary fencing to keep livestock away from construction areas or develop a grazing deferment plan to minimize impacts to pastureland during construction and restoration activities in accordance with its Plan.

As discussed in Section 3.8.1, impacts to pine plantation and upland forests would range from long-term in areas outside the permanent right-of-way to permanent for areas within the permanent right-of-way. As such, timber production within the construction and permanent rights-of-way would be temporarily reduced or permanently precluded, respectively. As described in Section 3.8.2, Gulf South would negotiate with affected landowners to obtain an easement agreement that would effectively eliminate timber production within the permanent pipeline right-of-way. However, after Gulf South has completed restoration of the right-of-way, timber harvesting equipment would be able to move freely across the pipeline to access adjacent forested areas with no expected effect on pipeline safety or operations. Compensation for any losses or limitations on future timber production values within the construction and permanent pipeline rights-of-way would be addressed during easement negotiations. Prescribed burns are often used in the vicinity of the proposed Project to manage planted pines, and pipeline rights-of-way may in some cases serve as fire breaks. Gulf South has committed to coordinating with landowners to mitigate any potential impact to prescribed burning activity caused by the proposed Project.

Appropriate landowner settlements, special construction measures, restoration, and post-construction monitoring would ensure that landowners are able to resume pre-Project activities in construction easements or that such impacts would be mitigated. Furthermore, settlement negotiations would ensure that property owners are fairly compensated for any loss of revenue associated with the construction or operation of the Project.

Existing Residences and Planned Developments

The proposed pipeline would traverse primarily rural, unincorporated areas. Table 3.8.3.1-1 identifies the residences within 50 feet of the construction work area. The pipeline route has otherwise been adjusted so that no displacements of residences would occur. Only three residences are located within 25 feet of the construction workspace, one of which may be abandoned. Approximately 6.9 acres of land classified as residential would be contained within the construction right-of-way or ATWSs, and 2.9 of those acres would be retained for the permanent right-of-way. During the planning stages for the proposed Project, Gulf South consulted with county and parish planning agencies and reviewed development plans to identify currently filed proposals for residential or commercial developments within 0.25 mile of the proposed construction right-of-way or associated aboveground facilities. From MP 10.6 to MP 11.2, the Braxton Estates development, owned by Equity Development Group, Inc., is located adjacent to the north side of Gulf South's proposed construction right-of-way.

TABLE 3.8.3.1-1
Residences Within 50 Feet of Construction Work Area and Proposed Mitigation

MP[1]	County, State[2]	Number of Residences	Distance from Construction Work Area (feet)	Distance from Pipeline Centerline	Direction from the Right-of-Way	Proposed Mitigation
3.6	Simpson County, MS	1	27	116	South	None
11.1	Simpson County, MS	1	15	55	North	Yes*
11.6	Simpson County, MS	1	27	130	South	None
14.1	Simpson County, MS	1	27	145	South	None
14.9	Simpson County, MS	1	27	112	South	None
30.3	Simpson County, MS	1	47	173	South	None
36.4	Smith County, MS	1	36	116	South	None
41.7	Smith County, MS	1	29	85	South	None
52.9	Jasper County, MS	1	34	89	South	None
53.0	Jasper County, MS	1	37	187	South	None
94.8**	Clarke County, MS	1	40	165	South	None
98.9	Clarke County, MS	1	11	52	South	Yes***
99.1****	Clarke County, MS	1	11	85	South	Yes***

Mitigation Notes:
* Immediately restore all lawn areas after backfilling the trench, fence the construction work throughout the open trench phase of construction, and use water trucks to minimize fugitive dust.
** This residence would not be impacted by Gulf South's proposed HDD of State Hwy. 511.
*** Reduce the construction work area to maintain 25 feet between the residence and the construction work area.
**** Residence appears to be abandoned. Gulf South would continue evaluation/monitoring of this property.
1 MP = Milepost
2 MS = Mississippi

General Construction and Operational Impacts to Residences

The general impacts of construction and operation of the proposed Project on residences would result from construction-related disturbances, limitation of land use type within the permanent pipeline right-of-way, and alteration of future development patterns. Specifically, potential construction-related disturbances include inconvenience caused by increased noise and dust generated by construction; locally increased traffic; effects on landscaping (including alteration and loss of plantings), wells, and septic systems; and removal of objects such as sheds and trailers from the construction right-of-way. Uses and structures that would be precluded from the permanent pipeline right-of-way include construction of aboveground structures not associated with the proposed Project, construction of septic system leach fields, and planting or cultivation of trees or orchards.

To minimize disruptions to residential areas near construction work areas, Gulf South would attempt to coordinate construction work schedules with affected landowners prior to starting construction. To further minimize impacts to residential areas within the vicinity of construction work areas, Gulf South would implement the following measures on an as-needed basis:

- Maintain access to all residences except for brief periods essential to pipe-laying activities.
- Where necessary, install temporary safety fencing to control access and minimize the hazards associated with an open trench.
- Notify affected landowners in advance of any scheduled disruption of household utilities and limit the duration of any interruption to the smallest time possible.
- Repair any damages to residential property that result from construction activities or provide compensation at fair market value.
- Restore all areas disturbed by construction work areas to "as before or better" conditions.

Additionally, for all residence located within 50 feet of the construction work area Gulf South would:

- Leave mature trees and landscaping up to the edge of the construction work area, unless necessary for safe operation of the construction equipment.
- Restore all lawn areas and landscaping within the construction work area consistent with the requirements of its plans immediately after backfilling the trench.
- Fence the edge of the construction work area adjacent to the residence for a distance of 100 feet on either side of the residence.
- Try to maintain a minimum distance of 25 feet between the residence and the edge of the construction work area.

Gulf South prepared site-specific residential construction plans, detailing the location of the proposed pipeline alignment, construction limits, and residential access for the three residences that would be located within 25 feet of the construction right-of-way.

In the Draft EIS, we recommended that Gulf South provide an assessment of how the proposed Project's construction would affect or be affected by the Braxton Estates development between

MPs 10.6 and 11.2. Gulf South has met with Equity Development Group, Inc., and has executed an easement agreement with the developer. As a result, Gulf South would install the pipeline farther away from Braxton Estates adjacent to the existing railroad right-of-way, along the southern boundary of the tract, to minimize impacts to potential future development. Currently, there is only one residence in the proximity of the construction corridor (15 feet outside of the workspace boundary). Gulf South has prepared a site-specific residential detail drawing for this residence that details the construction mitigation measures, which we have reviewed and find acceptable. Gulf South states that it has no indication from the developer that additional construction is planned prior to construction of the proposed pipeline. If additional residences are constructed within 25 feet of the construction corridor prior to or during the installation of the pipeline, Gulf South would provide a similar site-specific construction mitigation plan for review and approval by the Director of OEP.

In general, Gulf South sought to avoid residences because construction activities could inconvenience residents, remove or damage shade trees, disrupt landscaping and gardens, and potentially damage structures. For example, operation of large construction equipment in the immediate vicinity of homes can create dust, noise, and/or muddy conditions. Precautions must also be taken to protect pets and small children. As described in Section 2.5, EIs would be responsible for monitoring and ensuring compliance with all environmental mitigation measures required by the Certificate, if granted, including those residential mitigation measures identified above. Additionally, the FERC staff is interested in ensuring that landowner issues are resolved in an effective and timely manner. Therefore, Gulf South would be required to develop and implement an environmental complaint resolution procedure that provides landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the proposed Project and restoration of the right-of-way (see Section 5.2).

We received comments during the Pre-filing and scoping periods indicating that the proposed Project route could interfere with plans for construction of homes or other structures. In Section 4.4, we list several route variations that Gulf South incorporated into the proposed Project route during the Pre-filing phase in response to specific landowner requests. Additional minor reroutes to the proposed Project's pipeline alignment could be made during the easement negotiation process in accordance with landowner needs and requirements if they do not impact significant environmental resources or other landowners. Prior to construction, Gulf South would consult with the owners of all structures located within the construction work area, as part of the easement negotiation process, to develop a route or mitigation plan that would minimize impacts to those structures. If a minor reroute could not fully avoid the structures, Gulf South would relocate or replace the structures, or otherwise compensate the affected landowner per the terms of the agreement negotiated during the easement acquisition process.

3.8.4 Special Interest Areas Impacts and Mitigation

Delhi Municipal Airport

The proposed Delhi Compressor Station is approximately 3,000 feet east of the Delhi Municipal Airport in Richland Parish, Louisiana. The airport has plans for a 2,000-foot runway expansion in the future. As described in the Final EIS that was issued for Gulf South's East Texas to Mississippi Expansion Project (CP06-446-000), the pipeline proposed in that project would be located about 1,070 feet north of the Delhi Municipal Airport runway at MP 148.2 in Richland Parish, Louisiana. In that proceeding we found out that the airport has plans for a 2,000-foot runway expansion in the future. Gulf South indicated that it was consulting with the Federal Aviation Administration (FAA), the airport, and the City of Delhi to determine whether the project would interfere with aircraft operations. **We recommend that:**

- **<u>Prior to construction</u>, Gulf South should consult with the Delhi Municipal Airport officials and the FAA regarding impacts of the proposed Project, specifically the proposed Delhi Compressor Station, on airport operations, and file a site-specific construction plan that addresses any concerns identified by those authorities with the Secretary.**

Gulf South now plans to locate and build the Delhi Compressor Station as described in this proceeding. The compressor station would be located almost 3,000 feet east of the north-south oriented runway, and also in proximity to the airport's planned expansion. We believe the consultation and construction plans as required by the above recommendation stated would prevent adverse impacts to the Delhi Municipal Airport.

Thigpen Field Airport

The proposed pipeline route would be located approximately 500 feet south from current construction activities extending the north-south runway of Thigpen Field Airport at MP 55.1 near Bay Springs in Jasper County, Mississippi. The runway runs perpendicular to the proposed pipeline, which would be placed parallel to and on the south side of the Crosstex Pipeline's existing natural gas pipeline right-of-way. The runway's vegetative clear zone extends southward across the Crosstex Pipeline right-of-way for another approximately 1,300 feet. Gulf South has not indicated the results of any consultations it has had with the FAA, the airport, or the Town of Bay Springs to determine if the proposed Project would interfere with aircraft operations, the runway safety area, or the runway object-free area. Gulf South has not indicated whether it is aware of applicable safety regulations it would abide by, or of any special construction procedures, such as deep pipeline installation, that might be required in the vicinity of the Thigpen Field Airport. Therefore, **we recommend that:**

- **<u>Prior to construction</u>, Gulf South should consult with the Thigpen Field Airport officials and the FAA regarding impacts of the proposed Project on airport operations, and file a site-specific construction plan that addresses any concerns identified by those authorities with the Secretary.**

We believe the consultation and construction plans as required by the above recommendation stated would prevent adverse impacts to the Thigpen Field Airport.

Hazardous Waste Sites

Gulf South used Environmental Data Resources database reviews to identify any known hazardous waste sites within 1 mile of the proposed Project right-of-way and identified 10 sites. Three of these sites are located within 0.25 mile of the proposed route. Nine sites were underground storage tanks (UST), and one site is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site.

In the event that a hazardous waste site is discovered during construction of the proposed Project, Gulf South indicates that it would stop work, notify the appropriate state and federal agencies, and proceed in accordance with local, state, and federal regulations. Gulf South has developed a *Plan for the Unanticipated Discovery of Contaminated Environmental Media* that identifies the procedures that would be implemented during construction to identify, test, treat, and dispose of such materials in accordance with the appropriate state and federal regulations.

Recreational Areas

Recreation and special interest areas are defined to include lands administered by federal, state, county, or local agencies. Recreational areas along the proposed Project route consist of natural areas used for hunting, fishing, wildlife viewing, hiking, boating and canoeing, and other outdoor activities. No lands managed by The Nature Conservancy are located within the project area. These areas also include NRI streams and are discussed in detail below.

Specially Managed Lands Impacts and Mitigation

Specially managed lands are areas administered by federal, state, county, or local agencies; lands of historic or cultural significance; designated environmentally sensitive areas; national or state scenic rivers; and designated scenic areas or roads. This section quantifies potential land use type conversions and recreational impacts at the special interest areas that would be traversed by the proposed Project route.

Sixteenth Section Lands

The Mississippi Secretary of State informed the FERC about the proposed Project's potential effects on Sixteenth Section Lands in Mississippi. Title for Sixteenth Section lands is held by the State of Mississippi in trust to support public education (Mississippi Secretary of State, 2006). Sixteenth Section lands provide income to local school districts through the use or lease of lands for silviculture, agriculture, residential use, and/or hunting activities. By mandate, any revenues not used by local school districts can only be invested in federally secured investments.

The Mississippi Secretary of State's Office, as the designated supervisory trustee for these areas, indicated a desire to minimize pipeline crossings of Sixteenth Section Lands to the extent practical. Impacts to these properties from pipeline crossings would result in a loss of land use flexibility, preventing certain future property uses within permanent easements. Unlike properties held by private individuals or companies, any settlement received through easement settlements for Sixteenth Section Lands would be required to be invested in federally secured investments, thereby potentially limiting or decreasing future revenue generation from these lands. The State requested that if it were deemed that these properties could not be avoided, that crossings occur near parcel boundaries to prevent land use fragmentation on these lands.

The proposed Project would cross six Sixteenth Section Lands in Simpson, Jasper, and Clarke Counties, Mississippi (Table 3.8.4-1). Due to these tracts' extensive size and the Project's collocation with existing pipeline crossings at three of the six properties, avoidance of Sixteenth Section Lands would not be feasible. Deviation from the proposed Project alignment through these parcels would result in the clearing of new corridors, resulting in increased wildlife habitat and vegetation fragmentation. Given Gulf South's agreements with landowners, our examination of route alternatives, and attempts to minimize impacts through use of HDDs, we believe that impacts to Sixteenth Section Lands have been adequately minimized.

Nationwide Rivers Inventory

Streams included in the NRI are considered to possess "outstandingly remarkable natural or cultural values judged to be of more than local or regional significance" (NPS, 2006). The proposed Project would cross two NRI waterbodies: the Strong River at MP 18.0 in Simpson County, Mississippi; and the Chickasawhay River at MP 89.3 in Clarke County, Mississippi. The NRI reach of the Strong River extends from its confluence with the Pearl River upstream approximately 72 miles, to 1 mile below

the Interstate 20 bridge. The Strong River is an unspoiled stream with riffles and rapids in overhanging vegetation, and the entire reach is floatable. The NRI-listed reach of the Chickasawhay River extends from its confluence with the Pascagoula River upstream approximately 145 miles. The Chickasawhay River is a quiet, remote stream distinctive for its clay and limestone bluffs (NPS, 2004).

As described in Sections 2.3.2.1 and 3.3, Gulf South would use HDD installation techniques, in accordance with our Procedures, to avoid and minimize impacts to the waterbodies and adjacent riparian areas. As proposed, ATWSs associated with the Chickasawhay River HDD would result in some impacts to forested areas near this river. However, we believe these impacts would be relatively minor as the ATWSs would be located at least 1,650 feet from the edge of this stream. We have included a recommendation in Section 3.3.2.1 for Gulf South to complete consultations with the NPS regarding these crossings and withdrawal of hydrostatic test waters, and to file plans for additional mitigation measures, if needed. Gulf South's Procedures also include measures to prevent or minimize impacts resulting from the withdrawal or discharge of hydrostatic test waters.

TABLE 3.8.4-1
Sixteenth Section Lands Crossed by the Proposed Southeast Expansion Project

Mileposts Begin	Mileposts End	Landowner	Routing and Crossing Information
8.8	9.4	Simpson County School District	Gulf South's proposed pipeline is not collocated with an adjacent right-of-way through this area. Any alternative route would also not be collocated. The only alternatives to the proposed crossing would involve non-collocated routes that would create a new cleared corridor to the north of the property.
20.8	21.8	Simpson County School District	Gulf South's proposed pipeline is not collocated with an adjacent right-of-way through this area. Any alternative route would also not be collocated. The only alternatives to the proposed crossing would involve non-collocated routes. In addition, there are environmental constraints to the west of this property that would be impacted should an alternative to the west be identified.
26.8	26.9	Simpson County School District	Gulf South's proposed pipeline is not collocated with an adjacent right-of-way through this area. However, the proposed pipeline is just traversing the southwest corner of the section.
64.8	65.5	Jasper County School District	Gulf South's proposed pipeline would be adjacent to the CrossTex pipeline easement through this property. Any alternative route would not be collocated. The only alternatives to the proposed crossing would involve non-collocated routes that would create a new cleared corridor through the property.
84.5	85.5	Clarke County School District	Gulf South's proposed pipeline would be adjacent to the Transco pipeline easement through this property. Any alternative route would not be collocated. The only alternatives to the proposed crossing would involve non-collocated routes that would create a new cleared corridor through the property.
103.7	104.4	Clarke County School District	Gulf South's proposed pipeline would be adjacent to the Transco pipeline easement through this property. Any alternative route would not be collocated. The only alternatives to the proposed crossing would involve non-collocated routes that would create a new cleared corridor through the property.

Given the avoidance and minimization measures that would be implemented by Gulf South, as well as the recommended consultation with the NPS, we believe that construction of the proposed Project would not result in a significant impact to the NRI-listed Strong or Chickasawhay Rivers.

Farm Service Agency Managed Lands

The CRP program is a voluntary program administered by the FSA. The CRP allows owners of agricultural land to conserve those lands through planting of native grasses, trees, and other cover, with financial assistance from the federal government (USDA, 2006). Typically, these easements retire croplands with erodable soils or otherwise sensitive croplands from production for a period of 10 to 15 years. Gulf South indicates that at least three CRP lands would be crossed by the proposed pipeline route as listed in Section 3.5.3.

The proposed pipeline route is collocated with other existing rights-of-way in many places where FSA managed lands would be crossed. Collocation tends to reduce environmental impacts overall, by reducing the need for clearing of entirely new corridors in greenfield areas. We are recommending in Section 2.0 that Gulf South accept a 50-foot-wide permanent right-of-way.

As a result of the disturbance caused by the construction of the proposed Project, as well as operations, landowners may no longer be eligible to participate in the CRP or to receive the payments that they currently obtain from the FSA due to modified land use or modified vegetation type or strata. Since lands included in the construction or permanent pipeline rights-of-way would potentially be no longer eligible for inclusion in the CRP program, affected landowners could experience an associated financial loss. As part of the right-of-way procurement process, Gulf South would negotiate with the affected landowners to obtain an easement agreement for the construction and permanent pipeline rights-of-way. Compensation for any losses or limitations associated with CRP lands would be addressed during those easement negotiations.

Gulf South continues to consult with FSA regarding the crossing of FSA managed lands, as well as considerations for routing, construction methods, revegetation, and other impact minimization measures. Based on our consultations with FSA, we believe a series of impact minimization or mitigation measures may be appropriate in easements managed by FSA including reduced right-of-way widths and implementation of the elements of Gulf South's Procedures as appropriate, regardless of whether the sites meet COE wetland delineation requirements. Gulf South would be required to obtain Subordinate-Use Permits authorizing the crossing of any lands managed by FSA. Since consultations with the FSA are not complete, **we recommend that:**

- **Gulf South should consult with the FSA to determine appropriate seed mixes and/or revegetation efforts that should be implemented on CRP lands to minimize and mitigate construction and operations impacts. Gulf South should also retain and have available for inspection any records of consultation(s) with the FSA indicating specific measures agreed upon by Gulf South and the FSA that would be implemented on CRP lands.**

Based on the characteristics of FSA managed lands, Gulf South's proposed construction measures, and our above recommendation, we believe that impacts to FSA managed lands would be adequately minimized.

3.8.5 Transportation

Construction of the proposed Project would result in temporary and minor traffic delays related to road closures and lane blockages. The proposed Project area is predominantly comprised of low-density rural areas. As such, existing transportation infrastructure in the area traversed by the proposed Project route includes mostly rural roads and highways. As such, congestion-related delays would not be anticipated in association with construction of the proposed Project.

The proposed pipeline route would cross approximately 15 major U.S. or state highways, including Interstate 59, as well as numerous railroads and lightly-traveled paved and unimproved, unpaved rural roads. As described in Section 2.3, all railroads, major highways, and interstates would be crossed using subsurface boring techniques to avoid road and lane closures. Most major road crossings would be bored; however, crossings at US 49 (MP 12.6), Campbell Creek Road (MP 16.0), State Highway 13 (MP 18.2), and Interstate 59 (MP 69.4) would be accomplished via HDD associated with the crossing of adjacent waterbody features, which would also avoid closure of those roadways. Pipeline crossings of more lightly-traveled paved and unimproved, unpaved rural roads typically would be accomplished via open-cut installation, which could require temporary lane blockages and closures and implementation of detours, where feasible. In the absence of a reasonable detour, construction across the roadway would be staged to allow at least one lane of traffic to remain open except for the limited periods required for installing the pipeline. Efforts would also be made to schedule lane closures outside of peak traffic periods.

Construction across all roadways would be accomplished in accordance with Gulf South's Plan and the requirements of all applicable crossing permits and approvals. Therefore, any effects to local transportation patterns or infrastructure would be temporary and minor. As periodic maintenance and inspection activities along the proposed pipeline route would involve only infrequent light vehicle movement, no impacts to transportation would be expected during operation of the proposed Project.

3.8.6 Visual Resources

Visual resources refer to the composite of basic terrain, geologic features, hydrologic features, vegetative patterns, and anthropogenic features that influence the visual appeal of an area for residents or visitors. The proposed Project could alter existing visual resources in three ways: (1) construction activity and equipment may temporarily alter viewscapes, (2) construction and right-of-way maintenance would alter existing vegetation patterns, and (3) aboveground facilities would represent permanent alterations to the viewscape. The significance of these visual impacts would primarily depend on the quality of the current viewshed, the degree of alteration of that view, the number of potential viewers, and the perspective of the viewer.

3.8.6.1 Current Viewshed

Most of the proposed Project would extend primarily through rural areas that consist of pine plantation, forested lands, pastures, and agricultural lands with scattered residences. Most areas along the route do not provide long-range, unobstructed views, in part because of the topography and in part because much of the land adjacent to the proposed route is forested. However, public viewing points are present along some of the roadways in the Project area.

3.8.6.2 General Impacts and Mitigation

Pipeline Facilities

During construction, there would be temporary impacts to visual quality for viewers in the vicinity of the construction right-of-way due to the presence of construction equipment, work crews, and construction activities. Pipeline construction would represent a short-term, localized alteration to visual resources of the Project area.

After completion of construction, the temporary right-of-way would be restored to approximate pre-construction contours and would be allowed to revert to pre-construction uses and cover type. About 18 percent of the proposed pipeline route would traverse agricultural, pasture, open lands, residential, and industrial/commercial land use types. Pipeline installation in these areas would not result in a significant change to visual resources, as existing vegetative patterns would not be affected during operation of the proposed Project. However, affected forested areas outside the permanent pipeline right-of-way could take many years to recover, and forested land within the permanent right-of-way would be maintained in a condition free of woody vegetation for the life of the proposed Project. To reduce visual impacts related to the permanent pipeline corridor, Gulf South's proposed route would be collocated with or parallel existing utility rights-of-way where possible, thereby minimizing impacts to previously undisturbed vegetation. In these areas where the proposed pipeline would be collocated with existing rights-of-way, the visual impacts of the proposed Project would be minor because widening of the existing corridor would not significantly alter existing visual resources. The long-term visual impacts resulting from views of the corridor in existing forested areas where the proposed route would not be collocated with existing rights-of-way generally would be limited to a relatively small number of individuals, or brief observations afforded in areas where the corridor intersects roadways. As a result, we believe the visual impact of the permanent pipeline corridor would be minor.

Gulf South has avoided crossing state and federally managed lands and has also avoided most scenic vistas. As described in Section 3.8.4, however, the proposed Project route would cross two NRI-listed rivers, which have been noted for their visual character. The crossing of these resources would be accomplished via HDD; therefore, construction and operation of the proposed Project would not result in creation or expansion of an existing corridor, and long-term visual impacts to these features should be minimal. Furthermore, we have included recommendations in Section 3.3 for Gulf South to complete consultations with NPS and identify any plans to address additional mitigation measures that may be recommended by those agencies.

Aboveground Facilities

The proposed Project would include installation of three compressor stations, five meter and regulator facilities, one side valve and eight mainline valves. Most of the aboveground facilities would either be constructed in areas where existing viewsheds contain similar features or where views would be occluded by existing vegetation or topography. Given the limited visibility of these sites, screening provided by existing vegetation or landscaping, and frequent collocation with existing utility rights-of-way or industrial facilities, the aboveground facilities as a group would represent a minor visual alteration that would persist for the life of the Project. The potential site-specific visual impacts of each aboveground facility are described below.

Compressor Stations

The proposed compressor station sites would typically contain several buildings, including those housing compressor units and other associated equipment. Aboveground features outside the

buildings themselves would include piping and pig launcher/receiver facilities. Portions of these sites may be paved, covered with gravel, or landscaped, depending on facility operations and maintenance requirements. A chain-link fence would surround the perimeter of each compressor station site.

In the Draft EIS, we recommended that Gulf South file a description of the surrounding landscape, potential for visual impacts to nearby residents from, and the need for visual screening for, the proposed Delhi Compressor Station and the associated CenterPoint M/R Station. The proposed Delhi Compressor Station would be located in an area of active row-cropping. Gulf South would purchase and permanently maintain approximately 69.5 acres of land in this area. The landscape surrounding the proposed Delhi Compressor Station is currently comprised of agricultural fields, pastures, thin strips and patches of forested land, several residences, and a small cemetery. Some residences to the southwest of the site would have minimal sight barriers in the form of scattered strips of trees along State Highway 17 and the fence along the proposed compressor station boundary. We believe that the direct line of sight to residences along Highway 17 poses a long-term significant adverse visual effect that could be addressed with minimal vegetation measures to reduce visual impacts to nearby residents on the part of Gulf South. Therefore, **we recommend that:**

- **<u>Prior to construction</u>, Gulf South should file with the Secretary for review and written approval by the Director of OEP a visual screening plan to reduce the long-term adverse effects on the visual quality of residences located along Highway 17 that would result from installation of the Delhi Compressor Station.**

The proposed Harrisville Compressor Station would be located in an area dominated by upland forest. Gulf South would purchase and permanently maintain approximately 16.2 acres in this area. The proposed site is completely surrounded by upland forest that would visually screen the compressor station. No residences or businesses are within view of the Harrisville Compressor Station.

The proposed Destin Compressor Station and Destin M/R Station would be located in an area dominated by pine plantation and upland forest. Gulf South would purchase and temporarily disturb approximately 20 acres in this area, and would permanently maintain only about 23.3 acres. The remaining 11.1 acres would be allowed to revert to natural conditions. The proposed site is completely surrounded by planted pine trees, which would visually screen the compressor station. No residences or businesses are within view of the Destin Compressor Station.

Overall, we believe the change in visual quality in the vicinity of the compressor stations would affect few viewers and would result in a minor, long-term impact.

MLV and M/R Stations

MLV sites would consist of an area surrounded by a chain link fence within the confines of the permanent pipeline right-of-way. Approximately 0.5 acre of land currently designated upland forest and open land would be permanently impacted outside of the permanent pipeline right-of-way. Aboveground elements of each MLV site would include 12-inch piping with valving extending aboveground and connected on each side of the 42-inch valve with a crossover.

Based on review of aerial alignment sheets and information provided by Gulf South, it is likely that components of the proposed Project would be visible from nearby residences in two locations (MP 30.3 and MP 110.8). The MLV at MP 30.3 would be located adjacent to County Road 503. This facility would be visible to residences located approximately 300 feet to the southwest, 375 feet south, and 525 feet northwest of this proposed facility. The MLV located at MP 110.8 would be located in an open area, adjacent to the proposed Transco M/R Station and the existing Transco right-of-way. The

facilities at MP 110.8 would be visible to a residence located approximately 350 feet to the northeast. To reduce the potential for visual impacts to residences, Gulf South proposes to add vegetative buffers wherever they may be viewed by nearby residences.

M/R stations would be constructed adjacent to the cleared pipeline right-of-way at each of the proposed Project receipt and interconnect points to meter the flow and adjust the pressure of natural gas received from or delivered to those systems. Each M/R station would include meter and regulator equipment, flow pressure control equipment, and a customer facility housed within a fenced perimeter. The Transco M/R Station (MP 110.8) would also include a pig receiver. Sizes of the proposed Southern Natural and Tennessee Gas M/R stations would each be approximately 1 acre, and the Transco M/R station would be approximately 8 acres.

The Southern Natural (MP 45.7) and Tennessee Gas (MP 72.5) M/R Stations would be constructed in areas lacking nearby residences. Additionally, these stations would be constructed wholly or partially within, and largely screened by, forested land, further limiting the visual impact of these facilities.

With the recommendations discussed above, combined with the lack of proximate residences to other above ground facilities, we believe the proposed Project would not result in any significant impact on local viewsheds.

3.8.7 Conclusion Regarding Impacts to Land Use, Recreation and Special Interest Areas, and Visual Resources

The proposed Project would affect multiple land use types, with long-term or permanent impacts to forested areas. However, these impacts would not be significant overall given the amount of forested lands in the vicinity of the proposed Project. Additionally, most of the impacts to other land use types would not result in a permanent conversion of use. Several special interest areas and specially managed lands would also be affected by the proposed Project, but based on Gulf South's proposed measures and plans, ongoing consultations with managing authorities, and our recommendations, we believe that potential impacts would be adequately minimized. Visual resources would generally not be affected by the proposed Project, and we have included a recommendation that would minimize impacts at the Delhi Compressor Station.

3.9 SOCIOECONOMICS

3.9.1 Region of Influence

The proposed Project would consist of an approximately 110.8-mile-long, 42-inch-diameter, interstate natural gas pipeline, three new compressor stations, and associated ancillary facilities, as described in Section 2.1. The proposed pipeline would traverse four counties in Mississippi (Simpson, Smith, Jasper, and Clarke), and one county in Alabama (Choctaw). Additionally, a proposed compressor station is located in Richland Parish, Louisiana. For the purposes of our socioeconomic analysis, we define these counties and parishes as the region of influence for the proposed Project.

If the proposed Project were constructed, several potential socioeconomic effects could manifest themselves within the region of influence. Construction-related effects could include alteration of population levels or local demographics, increased demand for housing or public services, and increased employment opportunities. In addition, construction would result in increased government revenue associated with sales and payroll taxes. Potential socioeconomic impacts associated with operation of the proposed Project would include employment opportunities, ongoing local expenditures

by the operating company, an increased tax base, and an increase in the demand for provision of public services.

3.9.2 Population

Table 3.9.2-1 reports populations and selected demographic characteristics in the states, counties, and parish that would be traversed by the proposed Project. Based on census data for the year 2000 (U.S. Census Bureau, 2000), the total population in these counties and parish is 116,828. Populations in Louisiana experienced a growth between 1990 and 2000, with a 5.9 percent increase in population over the 10-year period. Richland Parish was relatively stable during this time period with a 0.5 percent decrease in population. Mississippi experienced considerable growth in the 10-year period, with increases between 2.1 and 16.7 percent occurring in the counties affected by the proposed Project. Although Alabama in general experienced growth over the 10-year period, the county affected by the proposed Project experienced a 7.6 percent decrease from 1990 to 2000.

TABLE 3.9.2-1
Existing Population and Demographic Conditions in the Region of Influence for the Proposed Southeast Expansion Project

Parish/County, State	2000 Population	Population Change Since 1990 (%)	Population Density per Square Mile	White, Non-Hispanic (%)	Black or African-American (%)	Hispanic (%)	Asian (%)	Native American (%)
Louisiana	4,468,976	5.9	102.6	2,794,391 (63)	1,443,390 (32)	107,738 (2)	54,256 (1)	24,129 (<1)
Richland, LA	20,981	-0.5	37.6	12,667 (60)	7,927 (38)	227 (1)	36 (<1)	26 (<1)
Mississippi	2,844,658	10.5	60.6	1,727,908 (61)	1,028,473 (36)	39,569 (1)	18,349 (<1)	11,224 (<1)
Simpson, MS	27,639	16.7	46.9	17,686 (64)	9,432 (34)	318 (1)	35 (<1)	32 (<1)
Jasper, MS	18,149	6.1	26.8	8,378 (46)	9,561 (53)	117 (<1)	12 (<1)	11 (<1)
Smith, MS	16,182	8.5	25.4	12,268 (76)	3,728 (23)	96 (<1)	15 (<1)	1 (<1)
Clarke, MS	17,955	2.1	26.0	11,518 (64)	6,220 (35)	120 (<1)	19 (<1)	17 (<1)
Alabama	4,447,100	72.8	87.6	3,125,819 (70)	1,150,076 (26)	75,830 (2)	30,989 (<1)	1,059 (<1)
Choctaw, AL	15,922	-7.6	17.4	8,724 (55)	6,985 (44)	107 (<1)	6 (<1)	24 (<1)

Source: U.S. Census Bureau, 2000

Population densities in the region of influence range from a low of 17.4 persons per square mile in Choctaw County, Alabama, to a high of 46.9 persons per square mile in Simpson County, Mississippi. These densities are relatively low compared to urban area densities that typically range from 3,000 to 6,000 persons per square mile (FERC, 2006), but are consistent with an area that is predominantly rural and agricultural.

The number of residents within the region of influence would increase temporarily during construction, which would occur for approximately four months between September 2007 and December 2007, as proposed. The peak construction workforce would be 1,400 workers, of which about 98 percent

(1,372) would be non-local. Assuming 0.8 family members (FERC, 2006) would accompany each non-local worker, total construction-related immigration would be approximately 2,470 persons. Gulf South indicates that construction of the pipeline would entail the simultaneous activity of three individual construction spreads over the proposed Project route. Additional work crews would also be employed at each of the proposed aboveground facilities. As such, these workers would be distributed along the length of proposed Project route and throughout the region of influence, thereby minimizing the potential population level and demographic effects to any individual county or parish.

As described above, construction-related immigration would be spread across the length of the proposed pipeline. Based on the miles of pipeline in each county, population impacts associated with non-local workers and their families are expected to range from, 2.1 to 0.1 percent, on average. This would represent a minor, temporary population increase confined to the period of proposed Project construction. The FERC does not believe the work force would have a significantly different demographic profile than that observed within the region of influence. As such, changes to local demographics would not be anticipated.

During operation, Gulf South estimates that the proposed Project would employ approximately three full-time workers. This would represent only a negligible, long-term population and demographic alteration.

3.9.3 Economy and Employment

The civilian labor force within the region of influence includes about 47,000 individuals whose major employment sector is education, health, social services, retail trade, and manufacturing. With the exception of Smith County, Mississippi, some of the counties and the parish within the region of influence report that the average unemployment is slightly higher and the average per capita income is slightly lower than the state-level values reported. In Smith County, Mississippi, the per capita income is considerably higher and unemployment is considerably lower than the state values (Table 3.9.3-1).

Construction of the proposed Project would result in the hiring of approximately 28 local workers. Additional jobs would also be created as a result of secondary activity associated with construction of the proposed Project, as purchases made by non-local workers of food, clothing, lodging, gasoline, and entertainment would have a temporary, stimulatory effect on the local economy. These jobs would represent a temporary, moderate increase in employment opportunities within the region of influence.

During operation, the proposed Project would create three full-time positions. This would represent a minor, permanent increase in the number of employment opportunities within the region of influence.

3.9.4 Housing

Table 3.9.4-1 reports selected housing statistics for the region of influence. Within this region there are approximately 2,148 rental units and units used for seasonal, recreational, or occasional use. Approximately 16,635 hotel or motel rooms supplement this potential housing stock, but most are located in the areas presented in Table 3.9.4-1.

At its peak, construction of the proposed Project would require about 1,372 non-local workers, as described in Section 3.9.2. If each worker required his or her own housing unit, the non-local work force would occupy about 8.2 percent of the temporary housing within the region of influence. Thus, the temporary housing available within the region of influence would be capable of meeting the temporary

and moderate increased demand for housing resulting from construction of the proposed Project. Housing demand for the three permanent positions generated by operation of the proposed Project would represent a negligible increase in housing demand.

3.9.5 Property Values

The FERC frequently receives comments regarding Project impacts on property values. These concerns generally center on four topics: devaluation of property if encumbered by a pipeline easement; identification of the party responsible for property taxes within a pipeline easement; the potential for Project effects on landowner insurance premiums; and the potential for reduced property values associated with lost timber and agricultural production.

TABLE 3.9.3-1
Existing Income and Employment Conditions Within the Region of Influence for the Proposed Southeast Expansion Project

County/Parish	Per Capita Income ($)	1999 Population Below Poverty Level (%)	Civilian Labor Force	Unemployment Rate (%)	Major Industry
Louisiana	**$16,912**	**19.6**	**3,381,306**	**7.3**	
Richland Parish	$12,479	23.4	8,249	6.9	Education, health, and social services
Mississippi	**$15,853**	**19.9**	**2,165,089**	**7.4**	
Simpson County	$13,344	19.7	11,389	6.3	Retail trade
Smith County	$25,137	16.4	6,996	6.6	Manufacturing
Jasper County	$12,889	20.8	7,228	8.3	Retail trade
Clarke County	$14,288	18.9	7,312	8.5	Manufacturing
Alabama	**$18,189**	**16.1**	**3,479,035**	**6.2**	
Choctaw County	$14,635	23.4	6,019	8.8	Retail trade

Notes:
U.S. Census Bureau, 2000

TABLE 3.9.4-1
Housing Statistics Within the Region of Influence for the Proposed Southeast Expansion Project

City, County, State	Number Hotel/Motel Rooms
Jackson, Hinds County, Mississippi	5,643
Hattiesburg, Forrest County, Mississippi	2,122
Meridian, Lauderdale County, Mississippi	1,312
Laurel, Jones County, Mississippi	952
Richland Parish, Louisiana	665

Notes:
Hattiesburg Convention and Visitors Bureau, 2006
Meridian Chamber of Commerce, 2006
Jones County Economic Development Authority, 2006

The impact that a natural gas project may have on the value of any land parcel depends on many factors. These include the size of the parcel, the parcel's current value and land use, and the value of other nearby properties. However, subjective valuation is generally not considered in appraisals. This is not to say that the proposed Project would not affect resale values. Potential purchasers may make a decision based on intended future use and, if the presence of the proposed Project would make that use infeasible, it is possible that that potential purchaser may not acquire the parcel. However, each potential purchaser has differing criteria and means.

Landowners are responsible for all property taxes levied against parcels, and this responsibility would be independent of the existence of any Project-related pipeline easement. However, if a landowner felt that the proposed Project, should it be constructed, reduced the value of their property, he or she would appeal the assessment and subsequent property taxation to the local property taxation agency. If the parcel were reappraised, the landowner would then be responsible for property taxes based upon an appraisal that directly incorporated the easement.

As described in Section 3.8, construction and operation of the proposed Project would result in a temporary loss of timber and agricultural productivity and a permanent conversion of some lands currently used for forestry operations to a maintained utility right-of-way. During easement negotiations, compensation for any loss of current or future agricultural and timber production would be considered.

3.9.6 Government Revenue

A portion of the estimated $60.5 million Project construction payroll would be spent locally for the purchase of housing, food, gasoline, and entertainment during construction. The exact amount would be dependent upon the proportion of the workforce that was local, the behavior of individual workers, and the duration of their stay. The majority of construction-related expenditures would be subject to either Louisiana's state sales tax of 4 percent, Mississippi's state sales tax of 7 percent, or Alabama's state sales tax of 4 percent (American Institute of Certified Public Accountants [AICPA], 2006). This increase in sales tax would represent a minor short-term increase in government revenues.

Table 3.9.6-1 contains Gulf South's estimate of the annual taxes that would be payable to each county and parish traversed by the proposed Project. Operation of the proposed Project would provide a permanent, minor increase in government revenues.

TABLE 3.9.6-1
Estimated Annual Taxes for the Proposed Southeast Expansion Project

County/Parish	Estimated Annual Taxes
Louisiana	
Richland Parish	$501,105
Mississippi	
Simpson County	$1,871,749
Smith County	$1,013,896
Jasper County	$1,316,551
Clarke County	$1,708,542
Alabama	
Choctaw County	$118,875
Total	**$6,530,718**

3.9.7 Public Services

Table 3.9.7-1 summarizes the number of full-time equivalent medical, police, and fire protection employees in the parish and counties affected by the proposed Project. These employees serve a population of approximately 116,828.

Construction of the proposed Project would temporarily increase demand for medical, police, and fire protection services. Gulf South has consulted with the counties and parish in the region of influence and believes that sufficient public services exist to meet Project-related needs. Furthermore, Gulf South would work with local law enforcement and emergency response agencies to coordinate effective emergency response for the proposed Project during construction and operation (see Section 3.12.1).

We note that construction of the proposed Project would occur during the school year, and a significant influx of students would place a considerable strain on the region's educational workers. However, due to the nature of the proposed construction and its relatively short duration (four months), non-local workers are not expected to be accompanied by substantive numbers of children. Thus, any impact would be minor and temporary.

During operation of the proposed Project, workers filling the three permanent positions and their associated family members would represent a minor permanent increase in the demand for the provision of public services. However, this increased demand would be offset by the Project-related increase in government revenues associated with operation.

TABLE 3.9.7-1
Emergency Staff and Facilities in the Parish and Counties Affected by the Proposed Southeast Expansion Project

County/Parish	Police Protection	Fire Protection	Health and Hospitals	Total Full-time Equivalent
Louisiana				
Richland Parish	Parish Sheriff's office and each municipality have their own law enforcement offices.	Six fire departments within the county.	One hospital with emergency capabilities.	911 service is available as well as medical air transport.
Mississippi				
Simpson County	Seven fire stations; five have medical capabilities. All stations are manned by volunteers.	Two hospitals with emergency capabilities.	Police department is responsible for four cities. Sheriff's department covers the entire county.	911 and ambulance service throughout the county. Air service is available from Jackson, requiring about 5 minutes' air time. Agreements in place with neighboring counties for HazMat personnel.
Smith County	One volunteer fire department in Taylorsville, Mississippi.	One hospital with emergency capabilities.	Two city police departments and one Sheriff's office within the county.	911 service is available throughout the county.
Jasper County	Eight volunteer fire departments within the county.	Jasper County Hospital is available with 66 beds and a trauma center.	Sheriff and city police departments are located in Bay Springs, Mississippi.	Jasper County First Responders 601-764-2820 (EMS).
Clarke County	Fifteen volunteer fire departments.	H. C. Watkins Memorial Hospital has 50 beds and emergency capabilities.	County Sheriff's office and each municipality have their own law enforcement offices.	Ambulance service and paramedics available throughout the county.
Alabama				
Choctaw County	Six fire departments within the county.	One hospital with emergency capabilities.	County Sheriff's office and two cities have their own law enforcement offices.	911 service throughout the county.

3.9.8 Impacts on Specific Economic Sectors

To date, Gulf South has not received any comments from landowners or other interested parties requesting information regarding specific economic sectors.

Below, we consider the potential for the proposed Project to result in significant effects to the agriculture and forestry economic sectors. These sectors are defined to include activities associated with harvested crops, timber production, livestock pasturing, and dairy production. This analysis focuses on the effects of potential land use changes (i.e., incorporation of agricultural lands into the construction or permanent rights-of-way) on regional economic sectors. Additional discussion of the potential for site-

specific effects to agricultural or forestry lands that would be crossed by the proposed pipeline route is in Sections 3.2 and 3.8.

As described in Section 3.8, construction and operation of the proposed Project would permanently affect approximately 75.2 acres of agricultural land and 283.4 acres of lands currently used for commercial forestry practices (pine plantation), as these areas would be contained within the permanent pipeline right-of-way. As discussed throughout this EIS, agricultural operations within the vast majority of permanent pipeline right-of-way would not be precluded during operations. As affected agricultural lands would largely return to their preconstruction condition and use, no significant effect to that economic sector would be anticipated in association with construction and operation of the proposed Project. Commercial forestry practices would be permanently precluded within the permanent pipeline right-of-way. However, given the magnitude of the land potentially affected relative to the total amount of land dedicated to sector production, no quantifiable impacts to the forestry economic sector would be expected.

3.10 CULTURAL RESOURCES

Section 106 of the NHPA, as amended, requires the FERC to take into account the effect of its undertakings (including the issuance of Certificates) on any properties listed in, or eligible for listing in, the NRHP and to provide the ACHP an opportunity to comment on the undertaking. Gulf South, as a non-federal party, is assisting the FERC in meeting its obligations under Section 106 of the NHPA and the ACHP's regulations set forth at 36 CFR 800.

3.10.1 Results of the Cultural Resources Survey

3.10.1.1 Louisiana

Information about the Delhi Compressor Station (the only portion of the project in Louisiana) was provided to the Louisiana State Historic Preservation Office (SHPO) in November 2006. The Louisiana SHPO advised on December 4, 2006 that no survey was needed for the Delhi Compressor Station site. No significant cultural resources or historic properties would be affected by project construction in Louisiana.

3.10.1.2 Mississippi

Gulf South conducted an initial cultural resource survey between August and November 2006, and January and March 2007, for the proposed pipeline, compressor station sites, associated aboveground ancillary facilities, and extra work areas (ATWSs, access roads, and pipe storage and contractor yards) within the Mississippi portion of the proposed Project. Additional surveys performed for three new contractor/storage yards identified by Gulf South in its May 29, 2007, response to the May 7, 2007, Data Request have yet to be filed.

The Mississippi survey identified 43 prehistoric sites. Nine of those sites are considered potentially eligible for listing in the NRHP. The remaining 34 prehistoric sites are not considered eligible for listing in the NRHP, and no further work was recommended. A total of 21 historic sites, four of which are standing structures, were identified in the Mississippi portion of the proposed Project. Of those historic resources, one historic standing structure is considered potentially eligible for listing in the NRHP. Finally, three sites were identified as multi-component sites and two are considered eligible for listing in the NRHP. Gulf South has adopted route variations that avoid impacts to all cultural resource sites identified as potentially eligible for listing in the NRHP.

The Mississippi Cultural Resource survey results are currently in review by the SHPO. Gulf South would need to develop plans for additional investigations at potentially significant sites to determine if they could be adversely affected by project construction. In the event that significant archaeological deposits or structures could not be avoided, treatment plans for data recovery and recording would need to be developed in consultation with the SHPO.

3.10.1.3 Alabama

Gulf South surveyed the 6.4-mile Alabama portion of the proposed pipeline, identifying no historic or prehistoric cultural resources. Gulf South has submitted a cultural resources survey report to the Alabama SHPO. To date, the Alabama SHPO has not submitted a response.

3.10.2 Unanticipated Discoveries Plan

Gulf South has filed an acceptable Unanticipated Discoveries Plan with the FERC that outlines the procedures that would be followed in the event that unanticipated cultural resources or human remains are encountered during construction of the proposed Project.

3.10.3 Native American Consultation

Gulf South contacted two Native American groups regarding the proposed Project. Those groups contacted include the Mississippi Band of Choctaw Indians and the Poarch Band of Creek Indians of Alabama. Letters were sent to representatives of each of these tribes on August 21, 2006, requesting comments on the proposed Project and the identification of any cultural or religious sites significant to the tribe. As of May 2007, no replies have been received from these tribes.

3.10.4 General Impacts and Mitigation

Gulf South has completed most of the necessary cultural resources surveys and submitted the required cultural resource survey reports to the Mississippi and Alabama SHPOs. Cultural resource surveys performed for modified work areas are still under review by the Mississippi and Alabama SHPOs. No response from either agency has been received to date. To ensure that required cultural resource studies and consultations are completed for all proposed Project components and that the FERC's responsibilities under Section 106 of the NHPA are met, **we recommend that:**

- **Gulf South should <u>defer</u> implementation of any treatment plans/measures (including archaeological data recovery), construction of facilities, and use of all staging, storage, or temporary work areas and new or to-be-improved access roads <u>until</u>:**

  a. **Gulf South files with the Secretary cultural resources survey and evaluation reports, any necessary treatment plans, and the Mississippi and Alabama SHPO comments on the reports and plans; and**

  b. **The Director of OEP reviews and approves all cultural resources survey reports and plans and notifies Gulf South in writing that treatment plans/procedures may be implemented and/or construction may proceed.**

All material filed with the Secretary containing <u>location, character, and ownership information</u> about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: <u>"CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE."</u>

3.11 AIR QUALITY AND NOISE

3.11.1 Air Quality

Air quality would be affected by construction and operation of the proposed Project. Though air emissions would be generated by operation of equipment during construction of the pipeline and aboveground facilities proposed by Gulf South, most air emissions associated with the proposed Project would result from the long-term operation of the proposed and modified compressor stations.

Gulf South proposes to construct the Delhi Compressor Station near Delhi in Richland Parish, Louisiana; to construct the Harrisville Compressor Station near Harrisville in Simpson County, Mississippi; and to construct the Destin Gas Transmission pipeline interconnect near Shubuta in Clark County, Mississippi.

At the Delhi Compressor Station, Gulf South proposes to install four Caterpillar 3616TALE engines equipped with oxidation catalyst, with a planned compression capacity of 18,940 Hp, one gas-fired 1,155-Hp Waukesha VGF standby generator engine limited to 500 hours/year, one 0.75 MMBtu/hr fuel gas heater, a condensate tank, condensate truck loading point, and an ESD blowdown stack.

At the Harrisville Compressor Station, Gulf South proposes to install four Caterpillar 3616TALE engines equipped with oxidation catalysts, with a planned compression capacity of 18,940 Hp, one gas-fired 470-Hp Waukesha VGF 24GL standby generator engine limited to 500 hours/year, a condensate tank, condensate truck loading point, and an ESD blowdown stack.

At the Destin Compressor Station, Gulf South proposes to install two Caterpillar 3612 engines equipped with oxidation catalysts with a planned compression capacity of 7,100 Hp, one gas-fired 425-Hp Waukesha VGF 18GL standby generator engine limited to 500 hours/year, one 0.75-MMBtu/hour fuel gas heater, one condensate storage tank, condensate truck loading point, and an ESD blowdown stack.

3.11.1.1 Existing Air Quality

The proposed Project would be constructed in portions of Richland Parish in Louisiana; Simpson, Smith, Jasper, and Clarke Counties in Mississippi; and Choctaw County in Alabama. These counties and parishes are characterized by a temperate climate. Rainfall at Jackson, Mississippi, located near the center of the proposed pipeline route, averages 55.95 inches annually (Weather.com). April is the wettest month in Jackson, averaging 5.98 inches of precipitation; and September is the driest month, averaging 3.23 inches. The warmest month is July, with an average high temperature of 91° Fahrenheit (F) and an average low temperature of 71° F. January is the coldest month, with an average high temperature of 55° F and an average low temperature of 35° F.

The CAA designates six pollutants as criteria pollutants for which the National Ambient Air Quality Standards (NAAQS) are promulgated. The NAAQS for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$), carbon monoxide (CO), ozone (O_3), and lead were set to protect human health (primary standards) and human welfare (secondary standards). State air quality standards cannot be less stringent than the NAAQS. Both Louisiana, and Mississippi have adopted the NAAQS, as defined in 40 CFR 50; these standards are summarized in Table 3.11.1.1-1.

Air Quality Control Regions and Attainment Status

Air quality control regions (AQCR) are areas established for air quality planning purposes in which implementation plans describe how ambient air quality standards will be achieved and maintained. AQCRs were established by the EPA and local agencies, in accordance with Section 107 of the CAA, as a means to implement the CAA and comply with the NAAQS through state implementation plans. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or portion thereof, is designated based on compliance with the NAAQS. AQCR designations fall under three categories as follows: "attainment" (areas in compliance with the NAAQS); "nonattainment" (areas not in compliance with the NAAQS); or "unclassifiable", which refers to areas with insufficient data to make a determination. The counties and parishes in which the proposed Project would be located are designated as "attainment" or "unclassifiable" for all criteria pollutants.

TABLE 3.11.1.1-1
National Ambient Air Quality Standards

Pollutant	Timeframe	Primary	Secondary
Particulate matter less than 10 microns in diameter	24-hour[a]	150 μg/m^3	150 μg/m^3
Particulate matter less than 2.5 microns in diameter	Annual[b]	15 μg/m^3	15 μg/m^3
	24-hour[c]	35 μg/m^3	35 μg/m^3
Sulfur dioxide	Annual	0.030 ppm (80 μg/m^3)	N/A
	24-hour[a]	0.014 ppm (365 μg/m^3)	N/A
	3-hour[a]	N/A	0.5 ppm (1,300 μg/m^3)
Carbon monoxide	8-hour[a]	9 ppm (10,000 μg/m^3)	None
	1-hour[a]	35 ppm (40,000 μg/m^3)	None
Nitrogen dioxide	Annual	0.053 ppm (100 μg/m^3)	0.053 ppm
Ozone	8-hour[d]	0.08 ppm (157 μg/m^3)	0.08 ppm
Lead	Quarterly	1.5 μg/m^3	1.5 μg/m^3

Notes:
μg = Microgram(s)
m^3 = Cubic meter(s)
N/A = Not applicable
ppm = Part(s) per million

a Not to be exceeded more than once per year.

b To attain this standard, the 3-year average of the weighted annual mean particulate matter less than 2.5 microns in diameter concentrations from single or multiple community-oriented monitors must not exceed 15.0 μg/m^3.

c To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 μg/m^3.

d To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations, measured at each monitor within an area over each year, must not exceed 0.08 ppm.

3.11.1.2 Regulatory Requirements

Federal Regulations

The CAA, 42 USC 7401 et seq. amended in 1977 and 1990, and 40 CFR Parts 50 through 99 are the basic federal statutes governing air pollution. The provisions of the CAA that are potentially relevant to the proposed Project include the following:

- New Source Review (NSR)/Prevention of Significant Deterioration (PSD)
- New Source Performance Standards (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Title V operating permits
- General Conformity

New Source Review/Prevention of Significant Deterioration

New Source Review refers to the preconstruction permitting programs under Parts C and D of the CAA that must be satisfied before construction can begin on new major sources or major modifications to existing major sources located in attainment or unclassified areas. This review may include a PSD review. This review process is intended to keep new air emission sources from causing existing air quality to deteriorate beyond acceptable levels codified in the federal regulations. For sources located in non-attainment areas, the Nonattainment New Source Review (NNSR) program is implemented for the pollutants for which the area is classified as nonattainment. The proposed Project would be located in attainment areas. Consequently, NNSR is not applicable to the proposed Project.

The PSD review regulations apply to proposed new major sources or major modifications to existing major sources located in an attainment area. The PSD regulations (40 CFR 52.21) define a "major source" as any source type belonging to a list of named source categories that emit or have the potential to emit 100 tons per year (tpy) or more of any regulated pollutant. A major source under PSD also can be defined as any source not on the list of named source categories with the potential to emit such pollutants in amounts equal to or greater than 250 tpy. Modifications to existing major sources have lower emission thresholds, called "significant emission increases"; amounts over these thresholds trigger PSD review. The proposed Project would not include facilities or operations included on the list of named source categories to which the 100 tpy trigger applies. Also, the proposed Project does not include any existing major sources under the PSD program; therefore the proposed Delhi, Harrisville, and Destin Compressor Stations are all subject to the 250 tpy threshold.

The PSD review evaluates existing ambient air quality and the potential impacts of the proposed source on ambient air quality (noting in particular whether the source would contribute to any violation of the NAAQS), and reviews the best available control technology (BACT) in order to minimize emissions. The PSD regulations contain restrictions on the degree of ambient air quality deterioration that would be allowed. These increments for criteria pollutants are based on the PSD review classification of the area.

None of the new facilities or additions to existing facilities would exceed emissions of 250 tpy of any criteria pollutant (see Tables 3.11.1.2-1 through 3.11.1.2-3 and the discussion under "Operations Emissions"). Therefore, PSD permitting is not applicable to the proposed Project.

Air Quality Control Regions and PSD

AQCRs are categorized as Class I, Class II, or Class III. Class I areas are designated specifically as pristine natural areas or areas of natural significance and have the lowest increment of permissible deterioration, which essentially precludes development near these areas. Class III designations, intended for heavily industrialized zones, can be made only on request and must meet all requirements outlined in 40 CFR 51.166. The remainder of the United States is classified as Class II. Class II areas are designed to allow moderate, controlled growth. The proposed Project would be located in a Class II area. The nearest Class I areas are the Caney Creek Wilderness, located south of Mena, Arkansas, and the Breton Sound Wilderness Area, located southeast of New Orleans. The proposed Delhi Compressor Station is approximately 215 miles south of the Caney Creek Wilderness Area. The proposed Harrisville and Destin Compressor Stations are approximately 170 miles north of the Breton Sound Wilderness Area.

TABLE 3.11.1.2-1
Proposed Emissions[a] for the Delhi Compressor Station

Emissions Source	NOx (TPY)	CO (TPY)	VOC (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	SO_2 (TPY)	HAPs (TPY)
Compressor Engine #1	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Compressor Engine #2	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Compressor Engine #3	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Compressor Engine #4	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Emergency Backup Generator	1.66	1.11	0.48	0.02	0.02	0.00	0.18
Condensate Storage Tank[b]	--	--	6.61	--	--	--	0.49
Truck Loading of Condensate[b]	--	--	1.14	--	--	--	0.17
Fuel Gas Heater	0.33	0.28	0.02	0.02	0.02	0.00	0.01
Piping Components (Fugitives)	--	--	3.27	--	--	--	0.01
Unpaved Roads (Fugitives)	--	--	--	0.43	0.06	--	--
Engine Blowdown Stack	--	--	6.29	--	--	--	0.32
Area Releases	--	--	5.33	--	--	--	0.27
Total	**130.03**	**33.39**	**112.74**	**6.11**	**5.74**	**0.32**	**16.25**

Notes:
a Based on full load and continuous operation. Emergency generator based on 500 hours/year.
b Estimated using GRI-GlyCalc3.01.

TABLE 3.11.1.2-2
Proposed Emissions[a] for the Harrisville Compressor Station

Emissions Source	NOx (TPY)	CO (TPY)	VOC (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	SO_2 (TPY)	HAPs (TPY)
Compressor Engine #1	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Compressor Engine #2	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Compressor Engine #3	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Compressor Engine #4	32.01	8.00	22.40	1.41	1.41	0.08	3.70
Emergency Backup Generator	1.66	1.11	0.48	0.02	0.02	0.00	0.18
Condensate Storage Tank[b]	--	--	6.61	--	--	--	0.49
Truck Loading of Condensate[b]	--	--	1.14	--	--	--	0.17
Fuel Gas Heater	0.33	0.28	0.02	0.02	0.02	0.00	0.01
Piping Components (Fugitives)	--	--	3.27	--	--	--	0.01
Unpaved Roads (Fugitives)	--	--	--	0.43	0.06	--	--
Engine Blowdown Stack	--	--	6.29	--	--	--	0.32
Area Releases	--	--	5.33	--	--	--	0.27
Total	**130.03**	**33.39**	**112.74**	**6.09**	**5.74**	**0.32**	**16.25**

Notes:
a Based on full load and continuous operation. Emergency generator based on 500 hours/year.
b Estimated using GRI-GlyCalc3.01.

TABLE 3.11.1.2-3
Proposed Emissions[a] for the Destin Compressor Station

Emissions Source	NOx (TPY)	CO (TPY)	VOC (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	SO_2 (TPY)	HAPs (TPY)
Compressor Engine #1	24.00	6.00	16.80	1.06	1.06	0.06	2.78
Compressor Engine #2	24.00	6.00	16.80	1.06	1.06	0.06	2.78
Emergency Backup Generator	0.61	0.41	0.18	0.01	0.01	0.001	0.07
Condensate Storage Tank[b]	--	--	6.61	--	--	--	0.49
Truck Loading of Condensate[b]	--	--	1.14	--	--	--	0.17
Fuel Gas Heater	0.33	0.28	0.02	0.02	0.02	0.002	0.01
Piping Components (Fugitives)	--	--	3.27	--	--	--	0.01
Unpaved Roads (Fugitives)	--	--	--	0.43	0.06	--	--
Engine Blowdown Stack[c]	--	--	6.29	--	--	--	0.32
Area Releases	--	--	5.33	--	--	--	0.27
Total	**48.94**	**12.69**	**56.44**	**2.58**	**2.21**	**0.12**	**6.90**

Notes:
a Based on full load and continuous operation. Emergency generator based on 500 hours/year.
b Estimated using GRI-GlyCalc3.01.
c The engine blowdown stack is for venting of natural gas from the compressor during maintenance activities.

New Source Performance Standards

The NSPS, codified in 40 CFR 60 and incorporated by reference in Louisiana Administrative Code (LAC) 33.III.3303, and the Mississippi Commission on Environmental Quality (MCEQ) regulations APC-S-1 Section 6.3, establish requirements for new, modified, or reconstructed units in specific source categories. NSPS requirements include emission limits, monitoring, reporting, and record keeping. The following NSPS requirements were identified as potentially applicable to the specified sources at the compressor stations.

Subpart Kb of 40 CFR 60, Standards of Performance for Volatile Organic Liquid Storage Vessels, lists affected emission sources as storage vessels containing volatile organic liquids. Regulatory applicability is dependent on the construction date, size, and vapor pressure of the storage vessel and its contents. Subpart Kb applies to new tanks, unless otherwise exempted, that have a storage capacity between 75 square meters (m^3) (19,813 gallons) and 151 m^3 (39,890 gallons) and contain volatile organic compounds (VOCs) with a maximum true vapor pressure greater than or equal to 15.0 kilopascals (kPa). Subpart Kb also applies to tanks that have a storage capacity greater than or equal to 151 m^3 and contain VOCs with a maximum true vapor pressure greater than or equal to 3.5 kPa. Each proposed compressor station would be equipped with a condensate tank, which is below the regulated capacity. Therefore, the proposed Project would not be subject to NSPS Subpart Kb standards.

On June 12, 2006, EPA proposed a new NSPS (40 CFR 60 Subpart JJJJ) for stationary spark ignition (SI) internal combustion engines. The proposed compressor stations each contain natural gas-fired compressor engines and emergency generators that may be potentially subject to 40 CFR 60 Subpart JJJJ. The proposed standard for stationary SI engines applies to all new, modified, and reconstructed stationary SI engines regardless of size. The pollutants to be regulated by the proposed NSPS for stationary SI engines are nitrogen oxides (NO_x), CO, and non-methane hydrocarbons (NMHC). Gulf South would comply with any applicable standards of EPA's proposed rule once it is finalized.

No other NSPSs are applicable to the proposed Project.

National Emission Standards for Hazardous Air Pollutants

The NESHAP, codified in 40 CFR Parts 61 and 63, regulates hazardous air pollutant (HAP) emissions. Part 61 was promulgated prior to the 1990 Clean Air Act Amendments (CAAA) and regulates only eight types of hazardous substances (asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride).

The 1990 CAAA established a list of 189 HAPs, resulting in the promulgation of Part 63. Part 63, also known as the Maximum Achievable Control Technology (MACT) standards, regulates HAP emissions from major sources of HAP emissions and specific source categories that emit HAPs. Part 63 defines a major source of HAPs as any source that has the potential to emit 10 tpy of any single HAP or 25 tpy of HAPs in aggregate. MACT standards are intended to reduce emissions of air toxics or HAPs through installation of control equipment rather than enforcement of risk-based emission limits. The proposed Delhi, Harrisville, and Destin Compressor Stations each would emit less than 25 tpy of total HAPs, as shown in Tables 3.11.1.2-1, 3.11.1.2-2, and 3.11.1.2-3, and no more than 10 tpy of any single HAP as reflected in Gulf South's emission estimates. Potential HAP emissions resulting from the proposed Project would be well below the 10/25 tpy thresholds at each station; therefore, MACT is not applicable.

Title V Permitting

The Title V permit program, as described in 40 CFR 70, requires sources of air emissions with criteria pollutant emissions that reach or exceed major source levels to obtain federal operating permits. These permits list all applicable air regulations and include a compliance demonstration for each applicable requirement. The major source threshold level in attainment areas is 100 tpy of NO_x, SO_2, CO, PM_{10}, $PM_{2.5}$, and VOC. Emissions of NO_x and VOC at the Delhi and Harrisville Compressor Stations would exceed the 100 tpy criteria pollutant threshold, as shown in Tables 3.11.1.2-1 and 3.11.1.2-2. Therefore, the Delhi and Harrisville Compressor Stations would require a Title V permit. None of the criteria pollutants would be emitted at the 100 tpy level at the Destin Compressor Station; therefore, a Title V permit would not be required for this facility.

General Conformity

40 CFR parts 51 and 93 define the requirements for determining conformity for federal actions to state or federal implementation plans. A conformity analysis is required for each criteria pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a federal action would equal or exceed any of the rates specified in the applicable implementation plan. The proposed Project would not be located in a nonattainment area and therefore, the general conformity requirements do not apply to the proposed Project.

State Regulations

In addition to the federal regulations described above, both Louisiana and Mississippi have state air quality regulations. The LDEQ manages air quality issues in Louisiana and the MDEQ manages air quality issues in Mississippi. Subject to EPA approval, these agencies manage the statewide air permitting, compliance, and enforcement programs. The Delhi Compressor Station would be authorized under the LDEQ Part 70 program, and the Harrisville and Destin Compressor Stations would be authorized under the MDEQ construction permit program. The Harrisville Compressor Station would file for a Title V permit with the MDEQ within a year after construction is completed.

3.11.1.3 General Impacts and Mitigation

Construction Emissions

Construction of the pipeline and access roads would generate air emissions during grading, trenching, backfilling, and during operation of construction vehicles along unpaved areas. The proposed Project would use existing roads to the extent possible. Some roads used for access would be improved during construction by widening or adding drain pipes, gravel, or grading; and some new roads and road extensions would be constructed. The roads would remain after construction to provide access to the pipeline for maintenance purposes. These activities could generate dust and particulate emissions from earth-moving activities and construction equipment engine exhaust.

Construction of the compressor stations would be performed with mobile equipment similar to that typically used for pipeline and road construction. In addition to the compressor stations, Gulf South would construct other aboveground facilities consisting of metering and regulation stations.

Construction would be expected to cause a minor and temporary impact to local ambient air quality as a result of fugitive dust and combustion emissions generated by construction equipment. Criteria pollutant emissions during operation of the fossil-fueled construction equipment would occur

from combustion products resulting from the use of gasoline and diesel fuels, primarily NO_2, CO, VOCs, PM_{10}, small amounts of SO_2, and small amounts of HAPs (e.g., formaldehyde, benzene, toluene, and xylene) produced by the construction equipment engines. Impacts from construction equipment would be temporary and would be expected to result in an insignificant impact on air quality.

LDEQ regulates the emissions of particulate matter arising from unpaved streets, access roads, construction activities through LAC33.III.1305, which requires application of water or dust-retardant chemicals, or paving of roadways. MDEQ does not have a specific regulation for fugitive dust from roadways. Gulf South indicates that if fugitive dust becomes a problem it would use proven construction practices such as water sprays to control fugitive dust. Water sprays have provided sufficient control to ensure protection of air quality during construction of projects similar to the proposed Project.

Operations Emissions

Emissions from the engines at all locations would be minimized through the use of Clean Burn technology, oxidation catalysts, and the use of clean burning natural gas fuels. As described in Section 3.11.1.2, the compressor stations would be operated in compliance with federal and state air quality regulations driven by the CAA. As stated previously, the proposed project would not be subject to PSD.

Each compressor station would include an emergency shut down (ESD) system, pursuant to DOT requirements. Activation of the ESD system would vent the piping (expel the natural gas) to the atmosphere in case of an emergency. The ESD would be used only in the event of an emergency. Compressor unit blowdowns would occur as needed to relieve pressure when a unit is taken off line. Natural gas blowdowns are not part of routine operation.

Tables 3.11.1.2-1 through 3.11.1.2-3 list the anticipated emissions of criteria pollutants and HAPs from the operation of each compressor station. Gulf South is completing air permit applications for the Delhi, Harrisville, and Destin Compressor Stations. Gulf South will provide the FERC copies of these applications upon submittal to the state permitting authorities.

Following the Draft EIS, Gulf South filed a revised screening analysis (using SCREEN3) for NO_x emissions for the Harrisville and Destin Compressor Stations. Emissions from the Delhi Compressor Station were not modeled. SCREEN3 is a conservative model used to determine if refined modeling is needed. It does not take into account specific local terrain or meteorological data. Since the equipment and emissions from the Delhi Compressor Station would be the same as the equipment and emissions from the Harrisville Compressor Station, NO_2 concentrations would be expected to be similar to the SCREEN3 modeled results for the Harrisville Compressor Station.

Gulf South used typical conversion factors in calculating the various concentrations for different averaging times as recommended in EPA's "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised" (EPA-454/R-92-019, October 1992), a document for applying screening techniques to estimate the air quality impact of stationary sources.

The Destin analysis included the NOx emissions from the two new gas compressor engines and the emergency generator engine. Emissions from the small heater were not considered in this analysis since the potential to emit is less than 1/2 tpy. The worst-case hourly impact for the two engines and the emergency generator was estimated to be 200.04 $\mu g/m^3$. The estimated annual NOx impact is 16.0 $\mu g/m^3$. Background NO_2 concentrations at this location were not available; however, background concentrations of NO_2 were available for Jackson County, Mississippi, averaging 13.16 $\mu g/m^3$ over the past three years. Assuming this is a worst-case background concentration, when added to station impacts

this results in a total off-site NOx concentration of 29.16 μg/m^3. This is well below the NAAQS of 100 μg/m^3 for NO_2. In addition, this finding is conservative since it does not include an NO_2/NOx reduction ratio. Based on these results, refined modeling is not needed.

The Harrisville analysis included the NOx emissions from the four new gas compressor engines and the emergency generator engine. Emissions from the small heater were not considered in this analysis since the potential to emit is less than 1/2 tpy. The worst-case hourly impact for the four engines and the emergency generator was estimated to be 275.66 μg/m^3. The estimated annual impact is 22.05 μg/m^3. Background NO_2 concentrations at this location were not available; however, background concentrations of NO_2 were available for Jackson County, Mississippi, averaging 13,16 μg/m^{3}over the past three years. Assuming this is a worst-case background concentration, when added to station impacts, this results in a total off-site NOx concentration of 35.21 μg/m^3. This is well below the NAAQS of 100 μg/m^3 for NO_2. In addition, this finding is conservative since it does not include an NO_2/NOx reduction ratio. Based on these results, refined modeling is not needed.

Operation of the aboveground meter stations and block valves would not result in substantial air emissions under normal operating conditions. Typically, only minor emissions of natural gas, called "fugitive emissions," occur from small connections at meter station and valve sites; and because such emissions are very small, they are not regulated by permit or source-specific requirements.

Use of the access roads for maintenance would generate occasional, minor, and short-term increases in dust similar to that generated on other unpaved roads in the area. Use of these roads by maintenance and operation personnel would have a negligible effect on air quality.

Construction of the proposed Project would be expected to result in temporary minor impacts to air quality. Operation of the proposed Project would be expected to result in long-term minor impacts to air quality.

3.11.2 Noise Quality

Noise quality can be affected both during construction and operation of pipeline projects. The magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures used by federal agencies to relate the time varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{eq} is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The L_{dn} is the L_{eq} with 10 decibels on the A-weighted scale (dBA) added to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for people's greater sensitivity to sound during nighttime hours. The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA.

3.11.2.1 Regulatory Requirements

In 1974, the EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This document provides information for state and local governments to use in developing their own ambient noise standards. EPA has determined that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impact from operation of the compressor facilities.

Mississippi and Louisiana do not regulate noise at the state level. Similarly, no noise regulations or ordinances that govern noise pollution from construction or industrial activities have been identified for any of the counties or local municipalities to be traversed by the proposed Project.

3.11.2.2 Existing Noise Levels

Impacts are determined at receptors known as noise sensitive areas (NSAs). NSAs include residences, schools and daycare facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas specifically known for their solitude and tranquility, such as wilderness areas. The following NSAs and background noise levels have been evaluated at each compressor station.

The Delhi Compressor Station would be located in Richland Parish, Louisiana, on the south side of Delhi, Louisiana. The land surrounding the site consists of pasture and active agriculture. There are currently no existing facilities at the site although there is a natural gas compressor station (i.e., Columbia Gulf Transmission Corporation's (CGTs) Delhi Compressor Station) near the site of the proposed Delhi Compressor Station. The closest NSA (NSA #1) consists of homes located approximately 1,100 feet west of the anticipated location of the compressor building (i.e., site center), and the next closest NSA (NSA #2) consists of two homes located approximately 1,500 feet northwest of the site center. NSA #3, while located only 900 feet northwest of the site, is not expected to be present after installation of the compressor station, and is therefore not evaluated as the nearest NSA. On September 26, 2006, Gulf South conducted an ambient sound-level survey at NSA #1. Noise sources during the sound-level survey included traffic on local roads, insects, birds, and wind. Measured noise at NSA #1 ranged from 45.0 to 53.6 dBA, with a calculated L_{dn} of 54.2 dBA (Table 3.11.2.2-1). Measured noise at NSA #2 ranged from 45.0 to 60.9 dBA, with a calculated L_{dn} of 59.5 dBA. Measured noise at NSA #3 ranged from 40.0 to 40.2 dBA, with a calculated L_{dn} of 46.4 dBA.

The Harrisville Compressor Station would be located in Simpson County, Mississippi, approximately 9 miles south of Florence, Mississippi. The land surrounding the site consists primarily of forest. The nearest NSAs are residences 4,200 feet east (NSA #1), 5,600 feet south-southeast (NSA #2), and 4,800 feet northwest (NSA #3) of the proposed station. On September 20, 2006, Gulf South conducted an ambient sound-level survey at the NSAs. Noise sources during the sound-level survey included traffic on local roads, insects, birds, and wind. Measured noise at NSA #1 was determined to be 37.1 dBA, with a calculated L_{dn} of 43.5 dBA. At NSA #2, measured noise was determined to be 42.1 dBA, with a calculated L_{dn} of 48.5 dBA. At NSA #3, measured noise was determined to be 38.2 dBA, with a calculated L_{dn} of 44.6 dBA. On June 15, 2007, Gulf South submitted a revised acoustical analysis for the Harrisville Compressor Station. The revised analysis was required since the potential noise impact of the Station on the Twin Lakes Camping Area (owned by the First Presbyterian Church of Jackson, Mississippi) was not addressed in the initial acoustical analysis (September 20, 2006) for the station. The three NSAs at the Twin Lakes Camping Area include NSA #4 (Wilderness Camp Area, 2,600 feet northwest), NSA #5 (Area of Restrooms/Cabins, 3,700 feet north-northwest,) and NSA #6 (Ropes Course, 4,000 feet north-northwest). At NSAs #4, #5, and #6, measured noise was determined to be 38.2 dBA at each location, with a calculated L_{dn} of 44.6 at each location (Table 3.11.2.2-1).

The Destin Compressor Station would be located in Clarke County, Mississippi, approximately 8 miles northwest of Shubuta, Mississippi. The land surrounding the site consists primarily of forest. The nearest NSA is a residence located approximately 1,400 feet east-northeast of the anticipated location of the compressor station. On September 22, 2006, Gulf South conducted an ambient sound-level survey at the NSA. Noise sources during the sound-level survey included traffic on local roads, insects, birds, and wind. Measured noise at NSA #1 was determined to be 41.9 dBA, with a calculated L_{dn} of 48.3 dBA (Table 3.11.2.2-1).

3.11.2.3 General Impacts and Mitigation

Construction Noise

Construction of the proposed Project is expected to be typical of other pipeline projects in terms of schedule, equipment used, and types of activities. Construction would increase sound levels in the vicinity of proposed Project activities, and the sound levels would vary during the construction period, depending on the construction phase. Pipeline construction generally would proceed at rates ranging from several hundred feet to 1 mile per day. However, due to the assembly-line method of construction, construction activities in any one area could last from several weeks to several months on an intermittent basis. Construction and modifications at the compressor stations would be concentrated in the vicinity of the construction activity. Construction equipment would be operated on an as-needed basis during those periods and would be maintained to manufacturers' specifications to minimize noise impacts.

TABLE 3.11.2.2-1
Existing Noise Levels at Nearest Noise-Sensitive Areas from the Proposed Southeast Expansion Project Compressor Stations

Noise Sensitive Area (NSA)	Distance/Direction of NSA to Compressor Station Site (feet)	Measured L_d (dBA)	Estimated L_n (dBA)	Calculated L_{dn} (dBA)
Delhi Compressor Station				
NSA #1	1,100 – west	53.6 dBA	45.0 dBA	54.2 dBA
NSA #2	1,500 – northwest	60.9 dBA	45.0 dBA	59.5 dBA
NSA #3	900 – northeast	40.2 dBA	40.0 dBA	46.4 dBA
Harrisville Compressor Station				
NSA #1	4,200 – east	37.1 dBA	37.1 dBA	43.5 dBA
NSA #2	5,600– south southeast	42.1 dBA	42.1 dBA	48.5 dBA
NSA #3	4,800 – northwest	38.2 dBA	38.2 dBA	44.6 dBA
NSA #4	2,600 – northwest	38.2 dBA*	38.2 dBA*	44.6 dBA*
NSA #5	3,700 – north-northwest	38.2 dBA*	38.2 dBA*	44.6 dBA*
NSA #6	4,000 – north-northwest	38.2 dBA*	38.2 dBA*	44.6 dBA*
Destin Compressor Station				
NSA #1	1,400 east northeast	41.9 dBA	41.9 dBA	48.3 dBA

Notes:
L_d = daytime sound levels
L_n = nighttime sound levels
L_{dn} = day-night equivalent sound level
dBA = decibels on the A-weighted scale
* Ambient sound level not measured but should be similar to measured ambient sound level at NSA #3

Nighttime noise levels would normally be unaffected because most pipeline construction would take place only during daylight hours. The possible exceptions would be at the HDD sites (e.g., at the crossings of water bodies and highways). At HDD locations, drilling equipment may operate on a 24-hour-per-day basis. In addition to the EPA's 55 dBA (L_{dn}) standard, noise level changes are categorized as follows: a 3 dBA increase is considered noticeable, a 6 dBA increase is considered clearly noticeable, and a 10 dBA increase is considered significantly noticeable. An acoustical assessment was prepared for all of the planned HDD sites with NSAs within 1 mile of HDD locations to show existing sound levels at each site location and the project levels from HDD activity. Predicted noise impacts on NSAs indicate that sound levels could exceed 55 dBA (L_{dn}) at two of the 24 HDD entry and exit sites due to HDD operations. Predicted sound levels ranged from 57.3 to 59.21 dBA (L_{dn}) at these two sites, as

shown in Table 3.11.2.3-1. Based on the acoustical assessment, all HDD locations would contribute below a 10 dBA noise increase above the ambient sound levels.

To ensure that NSAs are not exposed to excessive noise during nighttime drilling operations, Gulf South developed a plan for HDD operations that have the potential to exceed 55 dBA (L_{dn}), as listed in Table 3.11.2.3-1 below. The plan would install a temporary noise barrier system around the primary area of equipment at either the HDD entry side or HDD exit side. The barrier could be installed around two or three sides of the HDD equipment area. For example, the barrier could be constructed of 3/4-inch-thick plywood panels (e.g., barrier height should be at least 16 feet). If a plywood-type barrier is employed, it is also recommended that at least 60 percent of the inside surface of the barrier (i.e., surface facing the equipment) should be sound absorptive (e.g., attach 2-inch-thick fiberglass duct board). In addition, it is recommended that any diesel engines used to drive generators/pumps associated with HDD operations should include an adequate exhaust muffler (e.g., minimum, hospital-grade exhaust silencer). It should be noted that reducing the noise of mobile equipment, such as a crane or backhoe, is much more difficult than stationary engines and equipment since mobile equipment may have to work outside the general HDD equipment area.

Table 3.11.2.3-1 summarizes the projected L_{dn} at the closest NSA at each HDD site in which the benchmark sound criterion could be exceeded assuming that a temporary noise barrier is not employed successfully. For reference, a barrier system, if properly employed, could provide approximately 6 to 8 dB reduction of the noise associated with HDD stationary equipment. Based on the projected HDD noise levels, distances from HDD activity to the nearest NSAs, and Gulf South's HDD plan described above, HDD activity impacts would be minor and temporary at all nearby NSAs.

TABLE 3.11.2.3-1
Summary of the Estimated A-Weighted Level and Calculated Ldn at the Closest NSA for Each HDD Site That Could Exceed the Benchmark Sound Criterion, Assuming That a Temporary Barrier is Not Employed

HDD No.	Location of HDD in Which Benchmark Criterion Could Be Exceeded	Entry or Exit Point	Distance and Direction of Closest NSA	Calculated L_{dn} Due to Drilling Activity	Estimated L_{dn} With a Temporary Noise Barrier Employed
01	Dabbs Creek and Hwy. 49	Entry	1,200 ft. (west)	57.3 dBA	51.2 dBA
08	Interstate 59	Entry	1,000 ft. (SW)	59.1 dBA	53.0 dBA

Operational Noise

During operation of the proposed Project, potential noise impacts would be limited to the vicinity of the new compressor stations. Principal noise sources would include the air inlet, exhaust, and casing of the turbines. Secondary noise sources would include yard piping and valves. Noise from the relief valves, blowdown stacks, and emergency electrical generation equipment would be infrequent.

All compressor stations would include design measures to minimize sound generation. Silencers or mufflers would be installed on the turbine exhausts, and silencers would be installed on the turbine air intakes. The walls and roof of each compressor building would be comprised of acoustical panels consisting of a 22-gauge metal outer skin and 4 inches of fiberglass insulation with a perforated liner. The building ventilation system vents would be equipped with acoustical louvers or duct silencers.

The expected L_{dn} at NSA #1 closest to the Delhi Compressor Station would be 51.0 dBA due to sound generated by operation of the new station. When combined with the existing ambient noise level, the L_{dn} would be about 55.9 dBA at NSA #1, as shown in Table 3.11.2.3-2. The expected L_{dn} at NSA #2 is an estimated 47.6 dBA and 59.8 dBA when combined with the existing ambient noise level. Expected noise levels for NSA #3 is estimated to be 52.9 dBA and 55.5 dBA when combined with existing ambient noise levels. Predicted noise at the NSAs attributable to the Delhi Compressor Station is below the FERC specification of 55 dBA (L_{dn}). It should be noted that although NSA #3 is located 900 feet from the compressor station, this site is not expected to exist at the time of operation. As a result, no significant impact on the noise environment is anticipated as a result of typical operations at the Delhi Compressor Station.

The expected L_{dn} at NSA #4 closest to the Harrisville Compressor Station would be 42.3 dBA due to sound generated by operation of the new station. When combined with the existing ambient noise level, the L_{dn} would be about 44.6 dBA at NSA #4. Table 3.11.2.3-3 provides the ambient sound level at each NSA, the estimated contribution of the proposed station operating at full load at each NSA, the calculated sum of the two, and the potential noise increase at each NSA due to the station's contribution. The predicted noise attributable to the Harrisville Compressor Station at all NSAs is below the FERC specification of 55 dBA (L_{dn}). As a result, no significant impact on the noise environment is anticipated as a result of typical operations at the Harrisville Compressor Station.

The expected L_{dn} at NSA #1 closest to the Destin Compressor Station would be 49.0 dBA due to sound generated by operation of the new station. When combined with the existing ambient noise level, the L_{dn} would be about 51.7 dBA at NSA #1, as shown in Table 3.11.2.3-4. This level is below the FERC specification of 55 dBA (L_{dn}). As a result, no significant impact on the noise environment is anticipated as a result of typical operations at the Destin Compressor Station.

Minor short-term noise impacts are expected during the proposed Project construction, provided that equipment is maintained to the manufacturers' specifications to minimize noise. This assessment assumes that temporary noise barriers would be installed at the HDD sites listed in Table 3.11.2.3-1, and that hospital-grade mufflers would be installed on engines that do not move while operating at HDD sites listed in Table 3.11.2.3-1.

Minor long-term noise impacts are expected from compressor station operation during the life of the proposed Project and would not result in a significant effect on the noise environment. These minor impacts would result from the normal operation of compressor station equipment, as well as from blowdown events.

TABLE 3.11.2.3-2
Predicted Noise Contribution of the Delhi Compressor Station at NSAs

Noise-Sensitive Area (NSA)	Distance/Direction of NSA to Compressor Station Site (feet)	Existing Ambient L_{dn} (dBA)	Estimated Project L_{dn} (dBA)[a]	Total Estimated L_{dn} (dBA)[b]	Predicted Noise Increase (dBA)[c]
Delhi Compressor Station					
NSA #1	1,100 feet (W)	54.2 dBA	51.0 dBA	55.9 dBA	1.7 dB
NSA #2	1,500 feet (NW)	59.5 dBA	47.6 dBA	59.8 dBA	0.3 dB
NSA #3	900 feet (NE)	46.4 dBA	52.9 dBA	55.5 dBA	3.6 dB

Notes:
L_{dn} = day-night equivalent sound level
dBA = decibels on the A-weighted scale
a Estimated L_{dn} sound levels are based on operation of compressor units at compressor station with noise control measures installed as proposed.
b Estimated total L_{dn} = 10 log (10(Ambient L_{dn}/10) + 10 (Predicted L_{dn}/10)).
c Estimated increase in the ambient L_{dn} sound levels due to operation of compressor units at compressor station.

TABLE 3.11.2.3-3
Predicted Noise Contribution of the Harrisville Compressor Station at NSAs

Noise Sensitive Area (NSA)	Distance/Direction of NSA to Compressor Station Site (feet)	Existing Ambient L_{dn} (dBA)	Estimated Project L_{dn} (dBA)[a]	Total Estimated L_{dn} (dBA)[b]	Predicted Noise Increase (dBA)[c]
Harrisville Compressor Station					
NSA #1	4,200 feet (E)	43.5 dBA	36.9 dBA	44.4 dBA	0.9 dB
NSA #2	5,600 feet (SSE)	48.5 dBA	33.6 dBA	48.6 dBA	0.1 dB
NSA #3	4,800 feet (NW)	44.6 dBA	35.5 dBA	45.1 dBA	0.5 dB
NSA #4	2,600 feet (NW)	44.6 dBA	42.3 dBA	44.6 dBA	2.0 dB
NSA #5	3,700 feet (NNW)	44.6 dBA	38.4 dBA	45.5 dBA	0.9 dB
NSA #6	4,000 feet (NNW)	44.6 dBA	37.6 dBA	45.4 dBA	0.8 dB

Notes:
L_{dn} = day-night equivalent sound level
dBA = decibels on the A-weighted scale
a Estimated L_{dn} sound levels are based on operation of compressor units at compressor station with noise control measures installed as proposed.
b Estimated total L_{dn} = 10 log (10(Ambient L_{dn}/10) + 10 (Predicted L_{dn}/10)).
c Estimated increase in the ambient L_{dn} sound levels due to operation of compressor units at compressor station.

TABLE 3.11.2.3-4
Predicted Noise Contribution of the Destin Compressor Station at NSAs

Noise Sensitive Area (NSA)	Distance/Direction of NSA to Compressor Station Site (feet)	Existing Ambient L_{dn} (dBA)	Estimated Project L_{dn} (dBA)[a]	Total Estimated L_{dn} (dBA)[b]	Predicted Noise Increase (dBA)[c]
Destin Compressor Station					
NSA #1	1,400 feet (ENE)	48.3 dBA	49.0 dBA	51.7 dBA	3.4 dB

Notes:
L_{dn} = day-night equivalent sound level
dBA = decibels on the A-weighted scale
a Estimated L_{dn} sound levels are based on operation of compressor units at compressor station with noise control measures installed as proposed.
b Estimated total L_{dn} = 10 log (10(Ambient L_{dn}/10) + 10 (Predicted L_{dn}/10)).
c Estimated increase in the ambient L_{dn} sound levels due to operation of compressor units at compressor station.

To ensure that noise levels from operation of the Project facilities do not adversely impact surrounding areas, **we recommend that:**

- **Gulf South should file noise surveys with the Secretary <u>no later than 60 days</u> after placing each of the Delhi, Harrisville, and Destin Compressor Stations in service. If the noise attributable to operation of all of the equipment at any compressor station at full load exceeds an L_{dn} of 55 dBA at any nearby NSA, Gulf South should file a report on what changes are needed and should install the additional noise controls to meet the level <u>within one year of the in-service date</u>. Gulf South should confirm compliance with the above requirement by filing a second noise survey with the Secretary <u>no later than 60 days</u> after it installs the additional noise controls.**

If Gulf South provides assurance that any noise impacts have been mitigated, as required by the above recommendations, we believe that Project-related operations would not result in a significant effect on the noise environment.

3.12 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

Methane has an ignition temperature of 1,000^{o} F and is flammable at concentrations between 5 and 15 percent in air. Unconfined mixtures of methane in air are not explosive. However, a flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

3.12.1 Safety Standards

The DOT is mandated to provide pipeline safety under Title 49, USC, Chapter 601. The Pipeline and Hazardous Materials Safety Administration's (PHMSA) Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level. Section 5(a) of the Natural Gas Pipeline Safety Act (NGPSA) provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards, while Section 5(b) permits a state agency that does not qualify under Section 5(a) to perform certain inspection and monitoring functions. A state may also act as DOT's agent to inspect interstate facilities within its boundaries; however, the DOT is responsible for enforcement action. The majority of the states have either 5(a) certifications or 5(b) agreements, while nine states act as interstate agents.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues.

Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993, between DOT and the FERC, the DOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an Applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a certificate is requested in accordance with federal safety standards and plans for maintenance and inspection, or shall certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with Section 3(e) of the NGPSA. The FERC accepts this certification and does not impose additional safety standards other than the DOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert DOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipeline under the Commission's jurisdiction.

The FERC also participates as a member of the DOT's Technical Pipeline Safety Standards Committee, which determines whether proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the proposed Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined as follows:

Class 1	Location with 10 or fewer buildings intended for human occupancy.
Class 2	Location with more than 10 but less than 46 buildings intended for human occupancy.
Class 3	Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period.
Class 4	Location where buildings with four or more stories above ground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, MAOP, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. Preliminary class locations for the proposed Project have been developed based on the relationship of the proposed pipeline centerline to other nearby structures and man-made features. Gulf South has reported that the following segments of the proposed pipeline would be designated as Class 2:

- MP 29.2 to MP 30.4 (6,448 feet)
- MP 36.2 to MP 36.5 (1,745 feet)
- MP 54.2 to MP 55.0 (3,967 feet)
- MP 75.5 to MP 76.3 (3,008 feet)
- MP 87.1 to MP 88.0 (4,545 feet)
- MP 88.1 to MP 88.6 (2,643 feet)
- MP 94.4 to MP 95.4 (5,075 feet)

The remainder of the proposed pipeline would be designated as Class 1.

If a subsequent increase in population density adjacent to the right-of-way indicates a change in class location for the pipeline, Gulf South would reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness, if required to comply with the DOT code of regulations for the new class location.

In 2002, Congress passed an act to strengthen the Nation's pipeline safety laws. The Pipeline Safety Improvement Act of 2002 (HR 3609) was passed by Congress on November 15, 2002, and signed into law by the President in December 2002. No later than December 17, 2004, gas transmission operators must develop and follow a written integrity management program that contains all the elements

described in §192.911 and addresses the risks on each covered transmission pipeline segment. Specifically, the law establishes an integrity management program, which applies to all high consequence areas (HCA). The DOT (68 FR 69778, 69 FR 18228, and 69 FR 29903) defines HCAs as they relate to the different class zones, potential impact circles, or areas containing an identified site as defined in §192.903 of the DOT regulations.

OPS published a series of rules from August 6, 2002, to May 26, 2004, (69 FR 29903) that defines HCAs where a gas pipeline accident would do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate in 49 USC 60109 for OPS to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method, an HCA includes:

- Current Class 3 and 4 locations
- Any area in Class 1 or 2 where the potential impact radius[1] is greater than 660 feet and 20 or more buildings are intended for human occupancy within the potential impact circle[2]
- Any area in Class 1 or 2 where the potential impact circle includes an identified site[3]

In the second method, an HCA includes any area within a potential impact circle that contains:

- 20 or more buildings intended for human occupancy
- An identified site

Once a pipeline operator has determined the HCAs on its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The DOT regulations specify the requirements for the integrity management plan at § 192.911. The HCAs have been determined based on the relationship of the pipeline centerline to other nearby structures and identified sites. HCAs along the proposed Project route include the following locations:

- MP 7.3 to MP 7.8 (2,839 feet)
- MP 51.3 to MP 52.0 (3,897 feet)

The pipeline integrity management rule for HCAs requires inspection of the entire pipeline HCAs every seven years.

Part 192 prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under 192.615, each

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[1] The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in psi multiplied by the pipeline diameter in inches.

[2] The potential impact circle is a circle of radius equal to the potential impact radius.

[3] An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

pipeline operator must also establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for:

- Receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters
- Establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response
- Emergency shutdown of the system and safe restoration of service
- Making personnel, equipment, tools, and materials available at the scene of an emergency
- Protecting people first and then property, and making them safe from actual or potential hazards

Part 192 requires that each operator must establish and maintain a liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. Gulf South would provide the appropriate training to local emergency service personnel before the pipeline is placed in service. No additional specialized local fire protection equipment would be required to handle pipeline emergencies.

3.12.2 Pipeline Accident Data

Since February 9, 1970, 49 CFR Part 191 has required all operators of transmission and gathering systems to notify the DOT of any reportable incident and to submit a report on Form F7100.2 within 20 days. Reportable incidents are defined as any leaks that:

- Caused a death or personal injury requiring hospitalization
- Required taking any segment of transmission line out of service
- Resulted in gas ignition
- Caused estimated damage to the property of the operator, or others, or both, of a total of $5,000 or more
- Required immediate repair on a transmission line
- Occurred while testing with gas or another medium
- In the judgment of the operator was significant, even though it did not meet the above criteria

The DOT changed reporting requirements after June 1984 to reduce the amount of data collected. Since that date, operators must only report incidents that involve property damage of more than $50,000, injury, death, release of gas, or that are otherwise considered significant by the operator. Table 3.12.2-1 presents a summary of incident data for the 1970 to 1984 period, as well as more recent incident data for 1986 through 2005, recognizing the difference in reporting requirements. The 14.5-year period from 1970 through June 1984, which provides a larger universe of data and more basic report

information than subsequent years, has been subject to detailed analysis, as discussed in the following sections.[4]

TABLE 3.12.2-1
Natural Gas Service Incidents by Cause

Cause	Incidents per 1,000 Miles of Pipeline (Percent Distribution)	
	1970 through 1984	1986 through 2005
Outside forces	0.70 (53.8)	0.10 (38.5)
Corrosion	0.22 (16.9)	0.06 (23.1)
Construction or material defect	0.27 (20.8)	0.04 (15.4)
Other	0.11 (8.5)	0.06 (23.1)
Total	**1.30**	**0.26**

Sources: Jones et al. (1986); USDOT, OPS, http://ops.dot.gov/stats.htm (2006).

During the 14.5-year period, 5,862 service incidents were reported over the more than 300,000 total miles of natural gas transmission and gathering systems nationwide. Service incidents, defined as failures that occur during pipeline operation, have remained fairly constant over this period, with no clear upward or downward trend in annual totals. In addition, 2,013 test failures were reported. Correction of test failures removed defects from the pipeline before operation (Jones et al. 1986).

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 3.12.2-2 provides a percentage distribution of the causal factors as well as the annual frequency of each factor per 1,000 miles of pipeline in service (Jones et al. 1986). Data presented for the period extending from mid 1986 through 2003 were gathered from the DOT's OPS.

TABLE 3.12.2-2
Outside Forces Incidents by Cause
(1970 through 1984)

Cause	Percent
Equipment operated by outside party	67.1
Equipment operated by or for operator	7.3
Earth movement	13.3
Weather	10.8
Other	1.5

Source: Jones, et al. (1986)

[4] Jones, D. J., G. S. Kramer, D. N. Gideon, and R. J. Eiber, 1986. "An Analysis of Reportable Incidents for Natural Gas Transportation and Gathering Lines 1970 through June 1984." NG-18 Report No. 158, Pipeline Research Committee of the American Gas Association.

The dominant incident cause is outside forces, constituting 53.8 percent of all service incidents. Outside forces incidents result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage. Table 3.12.2-2 shows that human error in equipment usage was responsible for approximately 75 percent of outside forces incidents. Since April 1982, operators have been required to participate in "One Call" public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (e.g., oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. The 1986 through 2005 data show that the portion of incidents caused by outside forces has decreased to 38.5 percent.

The pipelines included in the data set in Table 3.12.2-1 vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. Furthermore, new pipe generally uses more advanced coatings and cathodic protection to reduce corrosion potential.

Older pipelines have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller-diameter pipelines, which have a greater rate of outside forces incidents. Small-diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

Table 3.12.2-3 clearly demonstrates the effectiveness of corrosion control in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the rate of failure compared to unprotected or partially protected pipe. The data shows that bare, cathodically protected pipe actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

TABLE 3.12.2-3
External Corrosion by Level of Control (1970 through June 1984)

Corrosion Control	Incidents per 1,000 Miles per Year
None – bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11

Source: Jones, et al. (1986)

3.12.3 Impact on Public Safety

The service incident data summarized in Table 3.12.2-1 include pipeline failures of all magnitudes, with widely varying consequences. Approximately two-thirds of the incidents were classified as leaks and the remaining third classified as ruptures, implying a more serious failure.

Table 3.12.3-1 presents the average annual fatalities that occurred on natural gas transmission and gathering lines from 1970 to 2005. Fatalities between 1970 and June 1984 have been separated into employees and non-employees, to better identify a fatality rate experienced by the general public. Of the total 5.0 nationwide average, fatalities among the public averaged 2.6 per year over this period. The simplified reporting requirements in effect after June 1984 do not differentiate between employees and non-employees. However, the data show that the total annual average for the period 1984 through 2005 decreased to 3.6 fatalities per year. Subtracting two major offshore incidents in 1989, which do not reflect the risk to the onshore public, yields a total annual rate of 2.8 fatalities per year for this period.

The nationwide totals of accidental fatalities from various manmade and natural hazards are listed in Table 3.12.3-2 in order to provide a relative measure of the industry-wide safety of natural gas pipelines. Direct comparisons between accident categories should be made cautiously, however, because individual exposures to hazards are not uniform among all categories. Nevertheless, the average 2.6 public fatalities per year is relatively small considering the more than 300,000 miles of transmission and gathering lines in service nationwide. Furthermore, the fatality rate is approximately two orders of magnitude (100 times) lower than the fatalities from natural hazards such as lightning, tornadoes, floods, and earthquakes.

The available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 301,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is 0.01 per year per 1,000 miles of pipeline. Using this rate, the proposed Project might result in a public fatality every 901 years. This would represent a slight increase in risk to the nearby public.

TABLE 3.12.3-1
Annual Average Fatalities
Natural Gas Transmission and Gathering System

Year	Employees	Non-Employees	Total
1970–June 1984	2.4	2.6	5.0
1984–2005[a]	-	-	3.6
1984–2005[a]	-	-	2.8[b]

Notes:
a Employee/non-employee breakdown not available after June 1984.
b Without 18 offshore fatalities occurring in 1989 (11 resulting from a fishing vessel striking an offshore pipeline and 7 from an explosion on an offshore production platform).
Sources: Jones et al. (1986); USDOT, OPS, http://ops.dot.gov/stats.htm (2006).

TABLE 3.12.3-2
Nationwide Accidental Deaths

Type of Accident	Fatalities
All accidents	90,523
Motor vehicle	43,649
Falls	14,985
Drowning	3,488
Poisoning	9,510
Fires and burns	3,791
Suffocation by ingested object	3,206
Tornado, flood, earthquake, etc. (1984 to 1993 average)	181
All liquid and gas pipelines[a] (1978 to 1987 average)	27
Gas transmission and gathering lines[b] (non-employees only, 1970 to 1984 average)	2.6

Notes:
a USDOT, "Annual Report on Pipeline Safety – Calendar Year 1987."
b Jones et al. (1986).
Source: All data, unless otherwise noted, reflect 1996 statistics from the U.S. Department of Commerce, Bureau of the Census, "Statistical Abstract of the United States, 118th Edition."

3.12.4 Additional Security and Safety Issues

During the scoping period, we received comments regarding the susceptibility of the proposed Project to terrorist attack. Due to the various motivations and abilities of terrorist organizations in conjunction with the extensive natural gas infrastructure within the United States, the likelihood of future acts of terrorism occurring at the Project site is unpredictable. The FERC has taken measures to limit the distribution of information to the public regarding facility design to minimize the risk of sabotage. Facility design and location information is removed from the FERC's website to ensure that sensitive information filed under Critical Energy Infrastructure Information is not readily available. Furthermore, the Commission, in cooperation with other federal agencies, industry trade groups, and interstate natural gas companies, is working to improve pipeline security practices, strengthen communications within the industry, and extend public outreach in an ongoing effort to secure pipeline infrastructure.

Despite the ongoing potential for terrorist acts along any of the nation's natural gas infrastructure, the continuing need for the construction of these facilities is not eliminated. Given the continued need for natural gas conveyance and the unpredictable nature of terrorist attacks, FERC, DOT, and the Office of Homeland Security's efforts to continually improve pipeline safety, would minimize the risk of terrorist sabotage of the Project to the maximum extent practical, while still meeting the nation's natural gas needs.

3.13 CUMULATIVE IMPACT

In accordance with NEPA and the FERC policy, we considered the cumulative impacts of the proposed Southeast Expansion Project and other projects in the general Project area. Cumulative impacts represent the incremental effects of the proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place

over a given period of time. The direct and indirect impacts of the proposed project are discussed in other sections of this EIS.

The purpose of this cumulative impact analysis is to identify and describe cumulative impacts that would potentially result from implementation of the proposed Project. This cumulative impact analysis generally follows the methodology set forth in relevant guidance (CEQ, 1997; USEPA, 1999). Under these guidelines, inclusion of other projects within the analysis is based on identifying commonalties of impacts from other projects to potential impacts that would result from the proposed Project. An action must meet the following three criteria to be included in the cumulative impacts analysis:

- Impact a resource area potentially affected by the proposed project.
- Cause this impact within all, or part of, the proposed project area.
- Cause this impact within all, or part of, the time span for the potential impact from the proposed project.

For the purposes of this cumulative impact analysis, we considered the project area to be the counties and parish traversed by the proposed project. Most effects of more distant projects we identified are not assessed because their impact would generally be localized and not contribute significantly to cumulative impact in the proposed project area.

The actions considered in the cumulative impact analysis may vary from the proposed project in nature, magnitude, and duration. These actions are included based on the likelihood of completion, and only projects with either ongoing impacts or that are "reasonably foreseeable" future actions were evaluated. Existing or reasonably foreseeable actions that would be expected to affect similar resources during similar time periods as the proposed project were considered further. The anticipated cumulative impacts of the proposed project and these other actions are discussed below, as well as any pertinent mitigation actions.

We identified three types of past, present, and reasonably foreseeable future projects that would potentially result in a cumulative impact when considered with the proposed Project. These are: (1) other natural gas pipeline projects; (2) facilities that would be associated with construction of the proposed Project but that are not under the FERC's jurisdiction; and (3) unrelated projects that are either in place, are under construction in the vicinity of the proposed Project, or are proposed (Table 3.13.1-1).

3.13.1 Other Natural Gas Pipeline Projects

The FERC has applications for two other proposed natural gas pipeline projects that would traverse the same general areas as the proposed Southeast Expansion Project in Louisiana, Mississippi, and Alabama. They include (1) CenterPoint Energy and Spectra Energy's Southeast Supply Header (SESH) Project, and 2) Gulf South's East Texas to Mississippi Expansion (ETM) Project. In addition, the FERC recently issued a Certificate for CenterPoint Energy Gas Transmission Company's (CEGT's) Carthage to Perryville Project (CTP Project), which is also located in northern Louisiana. See Figure 3.13.1 and Tables 3.13.1-1 and 3.13.1-2 for illustration of the locations and comparative impacts of these three projects along with the proposed Project.

We have identified the tentative construction schedules of these projects, as available, but the actual construction schedules would depend on factors such as economic conditions, the availability of funds, and the issuance of permits. The potential impacts associated with these projects that are most

likely to be cumulatively significant are related to wetlands and waterbodies, vegetation and wildlife (including federally and state-listed endangered and threatened species), land use, air quality, and noise.

TABLE 3.13.1-1
Existing or Proposed Natural Gas Projects that Would Cumulatively Impact Resources in the Southeast Expansion Project Area

Project	Description	Anticipated Construction Date	Counties/Parishes within Project Area
Natural Gas Pipeline Projects			
Carthage to Perryville	Construct and operate 172 miles of 42-inch-diameter natural gas pipeline	2006-2007	Panola County, Texas Caddo, DeSoto, Red River, Bienville, Jackson, Ouachita, and Richland Parishes, Louisiana
East Texas to Mississippi Expansion Project	Construct and operate 242 miles of 42-inch-diameter natural gas pipeline	2007	Panola County, Texas DeSoto, Red River, Bienville, Jackson, Ouachita, and Richland Parishes, Louisiana Warren, Hinds, Copiah, Simpson, and Walthall Counties, Mississippi
Southeast Supply Header Project	Construct and operate 104 miles of 42-inch-diameter and 165 miles of 36-inch-diameter (269 miles total) natural gas pipeline	2008	Richland and Madison Parish, Louisiana Warren, Claiborne, Copiah, Lawrence, Jefferson Davis, Covington, Jones, Forrest, Perry, Greene, George, and Jackson Counties, Louisiana Mobile County, Alabama
Southeast Expansion Project	Construct and operate 111 miles of 42-inch-diameter natural gas pipeline	2007-2008	Simpson, Smith, Jasper, Clarke Counties, Mississippi Choctaw County, Alabama Richland Parish, Louisiana
Gulf Crossing Project	Construct and operate a 351-mile-long, 42-inch-diameter natural gas pipeline, and 16 miles of 42-inch-diameter looping	2008	Grayson, Fannin, Lamar, Delta, Hopkins, Franklin, Titus, Morris, and Cass Counties, Texas Bryon County, Oklahoma Caddo, Bossier, Webster, Claiborne, Lincoln, Union, Ouachita, Morehouse, Richland and Madison Counties, Louisiana Looping (Hinds, Copiah, Simpson, Mississippi)
MidContinent Express Project	Construct and operate 262 miles of 42-inch-, 193 miles of 36-inch-, and 40 miles of 30-inch-diameter (495 miles total) natural gas pipeline	2008	Bryan County, Oklahoma Lamar, Red River, Franklin, Titus, Morris, and Cass Counties, Texas Caddo, Bossier, Webster, Claiborne, Lincoln, Union, Ouachita, Morehouse, Richland, and Madison Counties, Louisiana Warren, Hinds, Rankin, Simpson, Smith, Jasper, and Clarke Counties, Mississippi Choctaw County, Alabama

Notes:
N/A = Not Available
Associated proposed lateral pipelines not included

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Figure 3.13-1
Approximate Location of Natural Gas Pipeline Projects Near the Proposed Southeast Expansion Project

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While it is not certain if or when these actions will occur, its similarity and proximity to the proposed Project merits further consideration. The FERC (1989) considers that the general impacts of building multiple pipelines would be primarily additive. Based on the project scope, geographic location, and preliminary information, we anticipate that the SESH Expansion, ETM Expansion and CTP Projects would result in environmental impacts similar to those of the proposed Project.

CEGT's Carthage to Perryville Project

CEGT completed construction of its CTP Project in June 2007, a 42-inch-diameter natural gas pipeline system that would extend from Carthage in Panola County, Texas to near Delhi in Richland Parish, Louisiana. The project consists of 172 miles of pipeline and two compressor stations that total 41,240 hp. The pipeline connects multiple receiving points in east Texas with CenterPoint's Perryville Hub and four new interstate pipeline interconnections. The FERC issued CEGT its Certificate on October 2, 2006.

The CTP Project is considered here with respect to the potential for cumulative impacts to the natural and human environments of Texas and Louisiana. Detailed information regarding the environmental impacts that would be associated with construction and operation of the CTP Project are included in the EIS (FERC 2006) prepared by the FERC and can be viewed on the FERC website under Docket No. CP06-85-000.

East Texas to Mississippi Expansion Project

The ETM Expansion Project, also proposed by Gulf South, is an approximate 242-mile, 36-inch and 42-inch OD natural gas pipeline. This project includes the addition of 40,302 Hp of additional compression at one existing compressor station, and two new compressor stations with 30,000 Hp and 40,302 Hp. The ETM Expansion Project runs from Panola County, Texas in an easterly direction across Louisiana and ends in Simpson County, Mississippi. The terminus of the pipeline is Gulf South's existing Index 130, which is also the beginning of the proposed Southeast Expansion Project. The ETM Expansion Project was approved by the Commission on June 18, 2007, and is currently under construction.

The ETM Expansion Project is considered here with respect to the potential for cumulative impacts to the natural and human environments in Louisiana (Delhi area) and Mississippi. The proposed project has been filed and a Final EIS was issued in May 2007 and is being evaluated by the FERC. Detailed information regarding the environmental impacts that would be associated with construction and operation of the ETM Expansion Project can be viewed on the FERC website under Docket No. CP06-446-000.

Southeast Supply Header Project

Spectra Energy Gas Transmission (SEGT) and CEGT have proposed construction of a new 36-inch-diameter natural gas pipeline system that would extend approximately 269 miles southeast from Delhi, Louisiana in Richland Parish, Louisiana to near Coden, Alabama, in Mobile County, Alabama. In addition to the 270 miles of pipeline construction, the SESH Project would add three new compressor stations totaling 51,385 Hp. The pipeline would connect onshore gas supplies from Texas and Louisiana to the markets in the southeast, as well as interconnect with interstate systems in Mississippi and Alabama.

The SESH Project is considered here with respect to the potential for cumulative impacts to the natural and human environments of Louisiana and Mississippi. The project has been filed and is being evaluated by the FERC. The Draft EIS was issued on April 27, 2007. Detailed information

regarding the environmental impacts that would be associated with construction and operation of the SESH Project can be viewed on the FERC website under Docket No. CP07-44-000.

TABLE 3.13.1-2
Environmental Resources That Would Be Cumulatively Affected During Construction and Operation of Projects in the Vicinity of the Proposed Southeast Expansion Project

Project (Anticipated Construction Date)	Total Length/ Length of Collocation (miles)	Total Land Disturbance (acres)	Pipeline Diameter and Proposed Perm ROW Width	Open-Cut Waterbody Crossings	Wetlands Disturbed During Construction	Forested Wetlands Disturbed	Forestland Cleared	Federally Listed Endangered, Threatened, or Candidate Species	Residences Within 50 Feet	Potential National Register of Historic Places Sites
Carthage to Perryville (2006-2007)	172 40	2,498 (1,248 permanently)	42-inch 60 feet	104 perennial 136 intermittent	127 wetlands 50 acres	86 acres	1,316 acres	6	0	2
East Texas to Mississippi Expansion Project (2007) Docket No. CP06-446	242 185	4,034 (1,542 permanently)	42-inch 50 feet	780	301 wetlands 115 acres	81 acres	1,838 acres	10	4	
Southeast Supply Header Project (2008) Docket No. CP07-44, 45	269 0	3,417 (1,631 permanently)	36-inch for 165 miles 42-inch for 104 miles 50 feet	177 perennial 448 intermittent	246 wetlands 239 acres	249 acres	2,171 acres	19	6	6
Southeast Expansion Project (2008) Docket No. CP07-32	111 73	1,727 (857 permanently)	42-inch 50 feet	92 perennial 159 intermittent	129 wetlands 89 acres	48 acres	1,329 acres	9	18	9
Gulf Crossing Project (2008) Docket No. CP07-398	367 212	5651 (2698 permanently)	42-inch 60 feet	245 perennial 627 intermittent	147 wetlands 163 acres	127 acres	2,398 acres	16	15	3

Gulf Crossing Project

Boardwalk Pipelines has proposed construction of a new 42-inch-diameter natural gas pipeline system that would extend approximately 351 miles southeast from Grayson County, Texas, to Madison Parish, Louisiana. Additionally, the Gulf Crossing Project would include 4.5 miles of 42-inch-diameter pipeline looping in Madison Parish, Louisiana, and 11.2 miles of 42-inch-diameter pipeline looping in Hinds, Copiah, and Simpson Counties, Mississippi. The route would be collocated for 289 miles with the proposed MidContinent Express Project.

The Gulf Crossing Project is considered here with respect to the potential for cumulative impacts to the natural and human environments of Louisiana. The project was filed with the Commission on June 19, 2007, and is being evaluated by the FERC, but has not yet been approved. Detailed information regarding the environmental impacts that would be associated with construction and operation of the Gulf Crossing Project can be viewed on the FERC website under Docket No. CP07-398.

MidContinent Express Project

Kinder Morgan has proposed construction of a new 24-inch and 36 -inch-diameter natural gas pipeline system that would extend approximately 495 miles southeast from Bryan County, Oklahoma to Choctaw County, Alabama. The route would be entirely collocated with the SESH Project, then the ETM Expansion Project, and finally with the proposed Project. Landowners along the proposed Project could be (or may have already been) approached by Kinder Morgan representatives regarding an additional easement on their land. If the MidContinent Express Project is constructed as presently envisioned, this would represent a cumulative land use effect along with the proposed Project's right-of-way.

The MidContinent Express Project is considered here with respect to the potential for cumulative impacts to the natural and human environments of Louisiana, Mississippi and Alabama. The project is in the Pre-filing stage and is being evaluated by the FERC, but has not yet been approved. Detailed information regarding the environmental proceedings of the MidContinent Express Project are on the FERC website under Docket No. PF07-004-000.

3.13.2 Unrelated Projects

Local government planning officials were contacted to determine whether any new development is scheduled to occur in the vicinity of the Southeast Expansion Project. One proposal for new residential development was found to be pending within 0.25 mile of the construction right-of-way at MP 11 (Section 3.8.3). Based on our own research, no road projects are known to be located in the area of the proposed Project. The FERC would have no authority over permitting, licensing, funding, construction, or operation of highway projects. Federal, state, and local agencies must review highway projects for compliance with requirements for construction of facilities at sites or places where a governmental license or permit may be required. Expansion or construction of intrastate pipelines and highways would require state or federal permits and approvals to ensure compliance with Section 7 of the ESA; Sections 401, 402, and 404 of the CWA; and the CAA. Issuance of the necessary permits and approvals would reduce or avoid significant impacts from these facilities to wetlands and waterbodies, vegetation and wildlife (including threatened and endangered species), land use, and air quality and noise.

3.13.3 Potential Cumulative Impacts of the Proposed Action

Impacts to wetlands, waterbodies, vegetation, wildlife (including federally and state-listed endangered and threatened species), land use, and air quality and noise could contribute to larger

cumulative impacts. See Tables 3.13.1-1 and 3.13.1-2 for a comparative summary of the proposed construction projects in the vicinity of the proposed Project.

3.13.3.1 Wetlands and Waterbodies

Construction and operation of the proposed Project would result in both short-term and long-term impacts to waterbodies and wetlands. The short-term impacts such as soil or sediment disturbance would dissipate over a period of weeks, while longer term impacts, such as regrowth of forested wetlands within the temporary construction rights-of-way, would persist for months or years. The primary impacts to wetlands and waterbodies during operation of the proposed pipeline would be associated with routine right-of-way maintenance. All maintenance activities would comply with applicable federal regulations and Gulf South's plans (see Section 3.2) and Procedures (see Sections 3.3 and 3.4), but would continue throughout the life of the proposed Project.

If approved and constructed, the proposed Project and other reasonably foreseeable future projects would impact wetlands and would include permanent loss or conversion of some existing wetlands (see Table 3.4.1-1). Elements of these projects with the potential to affect wetlands and waterbodies would be subject to review and approval under Section 404 of the CWA, as administered by COE, as well as state and local wetland regulations (see Section 1.3). Any permanent or long-term impacts to wetlands and waterbodies would require appropriate mitigation. Construction of the proposed Project would affect 145 wetland areas, resulting in a total of approximately 68.94 acres of wetland disturbance, including approximately 17.85 acres of PFO wetland impacts. In Section 3.4.3, we are recommending the development of site-specific wetland crossing plans in select areas to further minimize forested wetland effects. Gulf South indicates that compensatory mitigation for wetland impacts associated with the proposed Project would be provided through the purchase of wetland mitigation bank credits in the area of the proposed Project. Furthermore, discharges to wetlands and other surface waters associated with construction and operation would require review, approval, and mitigation (if necessary) under the, LDEQ, MDEQ and ADEM stormwater discharge programs.

Construction of the proposed Project would result in 308 individual waterbody crossings. Gulf South proposes to use 15 HDDs to accomplish pipeline installation, including the following five major waterbodies: the Leaf River (MP 44.1), the West Tallahala River (MP 45.3), the Chickasawhay River (MP 89.3), and one unnamed pond (MP 87.8). The Chickasawhay River is also one of the NPS-designated Nationwide Rivers Inventory (NRI) streams that would be crossed. The use of the HDD method would avoid direct impacts to waterbodies and minimize impacts to riparian vegetation at those crossings. Any inadvertent release of drilling fluids (frac-out) or accidental fuel and chemical spills would be greatly reduced by the implementation of Gulf South's HDD Plan and SPCC Plan.

Because most of the projects listed in Tables 3.13.1-1 and 3.13.1-2 are located within the same major watersheds crossed by the proposed Project pipeline, and because some of these projects would likely involve direct and indirect waterbody impacts, the proposed Project and other reasonably foreseeable future projects would result in some cumulative impacts to waterbodies. These temporary impacts would include runoff from construction areas, temporary and localized increases in turbidity and sedimentation associated with in-water construction, and withdrawal and discharge of surface waters for hydrostatic testing of pipeline segments. As described in Section 3.3, these effects would be relatively minor and would be further minimized by implementation of Gulf South's plans and Procedures and our recommendations; therefore, we believe that cumulative impacts to wetlands and waterbodies would be adequately minimized.

3.13.3.2 Vegetation and Wildlife

Construction of the proposed Project and other reasonably foreseeable future projects would cause a cumulative impact on native vegetation and associated wildlife. These cumulative impacts would be most significant if the projects were constructed at or near the same time and within close proximity of one another. Either circumstance would increase the impacts and would lengthen the recovery time for affected vegetative communities. The proposed Project, if approved, would impact native vegetative communities during construction, including approximately 646.6 acres of upland forest (slope hardwood and loblolly pine-hardwood forest) and 578.8 acres of pine plantation.

Cumulative impacts within a region, such as lost acreage of forestland, are additive. Furthermore, many wildlife species depend on mature contiguous tracts of forest to sustain their migratory and reproduction cycles. These species include dozens of migratory songbirds and terrestrial mammals that are not migratory but that require large tracts of forest to support their home ranges. The impacts of fragmentation can be immediate and significant because population levels for many such species are currently low and on the decline.

The extent and duration of cumulative wildlife habitat impacts associated with construction of the proposed Project and other future projects would be minimized by using existing, maintained rights-of-way and other disturbed areas as much as possible. Gulf South's proposed route would be collocated with or parallel to existing utility rights-of-way such as Crosstex and Transco rights-of-way where possible, thereby minimizing impacts to previously undisturbed vegetation. The proposed pipeline route would parallel existing utility rights-of-way for approximately 73 miles, or about 66 percent of the proposed route. Additionally, approximately 33 percent of the proposed pipeline route would traverse agricultural, industrial, open lands, pastures, and other areas that would typically experience rapid revegetation. Furthermore, Gulf South would implement the mitigation measures outlined in its plans and Procedures to encourage the regrowth of native vegetation and discourage the spread of exotic or noxious plant species.

Forty-six federally-listed endangered or threatened, state-listed endangered or threatened, and/or special-status species would be potentially impacted by construction activities associated with the proposed Project. As described in Section 3.7, with implementation of our recommendations for mitigation to avoid and minimize impacts, we believe that the proposed Project would not significantly affect federally listed species. However, if other reasonably foreseeable future projects were to impact the same habitats as the proposed Project route, cumulative impacts to these listed species would occur. Impacts to such species would likely be reduced or eliminated through conservation and mitigation measures identified during the permitting processes because protection of threatened, endangered and other special-status species is part of the federal and state permitting processes. Consequently, we believe that cumulative impacts to vegetation and wildlife resources would be relatively minor.

3.13.3.3 Land Use

Construction of the proposed Project and other reasonably foreseeable future projects would result in temporary and permanent changes in land use within the Project area. The proposed Project would encumber a total of approximately 1,727 acres of land during construction. Approximately 71.0 percent of that land would be upland forest or pine plantation, 4.6 percent would be agricultural, 10.0 percent would be open land, 3.3 percent would be pasture, and 4.4 percent would be wetland. Residential land, other/roads, commercial/industrial land, and open water land use types would also be affected, accounting for the remaining 6.7 percent. While most of these impacts would be temporary in nature, construction of the proposed Project would result in some permanent land use changes, including

conversion of approximately 283.4 acres of pine plantation, 336.1 acres of forested uplands, and 17.9 acres of forested wetlands to maintained utility right-of-way.

Land use impacts associated with the proposed ETM Expansion Project include approximately 4,034 acres. Land use impacts associated with the existing Denbury, Crosstex, and Transco pipelines have already been accounted for during the permitting of the respective lines. Land use impacts associated with the pipeline projects would likely cause a cumulative effect when considered in conjunction with the proposed Project. Because some or parts of these projects were constructed or are proposed to be constructed largely within or adjacent to existing maintained rights-of-way, the impact of land use changes would be reduced. Unlike transportation projects which would permanently convert thousands of acres of land to paved impervious surface, much of the land affected during construction of the proposed Project and the other pipeline projects would be restored and allowed to revert to preconstruction uses and conditions once pipeline installation was complete. Because non-woody vegetation would be expected to return to preconstruction conditions over the short term, impacts to acreage classified as agriculture, pastures, or open land would be short term and minor. Long-term impacts to cleared forestland located outside of permanently maintained rights-of-way would take many years to return to preconstruction conditions, with recovery time dependent on the types and ages of the trees removed. However, given the prevalence of these land uses and cover types within the affected counties and parishes, we believe that cumulative impacts to land use would be relatively minor.

3.13.3.4 Air Quality

Air quality would be affected by construction and operation of the proposed Project and other reasonably foreseeable future projects. Construction of these projects would temporarily impact air quality by generating emissions from operation of fossil-fueled construction equipment and fugitive dust from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. However, the majority of impacts to air quality would occur during operation of these projects. The currently constructed CTP Project, the proposed Project, and the proposed ETM and SESH Projects, all would contribute to ongoing air emissions associated with operation of compressor stations. In the Delhi, Louisiana area, the proposed Delhi Compressor Station would produce cumulative impacts in association with the CEGT's existing Delhi Compressor Station and the proposed SESH Delhi Compressor Station. Any proposed or planned roadway improvements in the area of the proposed Project might also contribute increased levels of air emissions as a result of increased vehicular traffic.

Because construction-related air emissions would be temporary and localized in nature, they would be unlikely to contribute significantly to cumulative air quality impacts. Air emissions from operations of portions the proposed Project and the portions of other projects listed in Table 3.13-2 with compressor stations located in the same air quality control region could present a cumulative impact since they would be discharged into a shared air basin. The Delhi Compressor Station is the only station that would be constructed in the same region as other compressor stations listed in Table 3.13-2. Initial screening modeling has been recommended to be performed for the Delhi Compressor Station to identify potential impacts and determine whether further cumulative analysis is warranted. The counties and parish in which the proposed Project would be constructed are in attainment for all NAAQS criteria pollutants. Also, each of the projects listed in Table 3.13-2 would be required to meet all applicable federal and state air quality standards.

3.13.3.5 Noise

Potential noise impacts associated with the proposed Project and those projects listed in Table 3.13-2 would occur during construction and operation. Because of the linear nature of these projects, construction-related noise impacts would tend to be of short duration in a given area.

Furthermore, because most construction activities would be limited to daylight hours, construction-related noise impacts would not occur at night for the most part. The proposed Project would cause minor temporary impacts at NSAs near HDD sites. Potential noise-related impacts during operation of the proposed Project and the other pipeline projects listed in Table 3.13-2 would primarily be limited to the vicinity of the associated compressor stations. As described in Section 3.11, the estimated noise that would be generated by the proposed Delhi, Destin, and Harrisville Compressor Stations would meet acceptable levels at the nearest NSA, but we are recommending monitoring to ensure no impacts occur.

Noise emissions from compressor station operations may be additive with noise-generating elements of other reasonably foreseeable future projects if they are located near a common NSA, for example, in the Delhi, Louisiana, area where two new compressor stations are being proposed. However, both compressor stations would be required to comply with the FERC standards for noise levels. A cumulative noise analysis is currently being performed at the NSAs in common for both compressor stations which should identify any potential noise impacts at this location.

The proposed project would include 18,940 Hp at the Harrisville Compressor Station. The Gulf Crossing Project would add an additional 30,000 Hp at this compressor station. At a minimum, both projects would be required to comply with the FERC standards for noise levels. With both projects complying with the FERC noise level requirements, noise impacts would not be considered significant.

3.13.4 Conclusions

If the proposed Project and the SESH Project are certificated, along with the recently certificated CTP and ETM Expansion Projects, all construction would be within the same general area, and the effects would overlap in time from the years 2006 through 2009. Additionally, the type of project, construction methods, and impacts would be similar. Although each of these unrelated projects would result in temporary and minor effects during construction, each project would be designed to avoid or minimize impacts to wetlands, waterbodies, protected and special-status species, and other sensitive resources. Additionally, significant unavoidable impacts to sensitive resources resulting from these projects would be mitigated. Mitigation generally leads to avoidance or minimization of cumulative impacts. We therefore consider that the potential cumulative impacts of the three proposed pipeline projects under our review, the recently certificated CTP Project, Gulf South's proposed project routed along the existing Crosstex and Transco pipeline corridors, have been or would be minimized.

We are recommending additional measures to further reduce the environmental impacts associated with the proposed Project, including requiring Gulf South to evaluate whether it can use about 10 feet of other existing utility rights-of-way to further reduce impacts. The environmental impacts associated with the proposed Project would be minimized by careful project routing, utilization of HDD techniques to avoid and minimize impacts to some sensitive resources, and implementation of appropriate mitigation measures. Consequently, only a small cumulative effect is anticipated when the impacts of the proposed Project are added to past, present, or reasonably foreseeable future projects in the area. For any project that still requires a FERC certificate, we would evaluate the impact during our NEPA review process.

4.0 ALTERNATIVES

As required by the NEPA, we have evaluated several alternatives to the proposed Southeast Expansion Project to determine whether they would be technically and economically feasible and environmentally preferable to the proposed action. Our alternatives analysis includes alternatives proposed by the general public as well as other federal and state resource agencies, and considers the environmental differences resulting from each alternative as well as the alternative's ability to meet the proposed Project's objectives.

We considered the No-Action or Postponed Action alternative, alternative energy sources, the effects of energy conservation, system alternatives, route alternatives, route variations, and aboveground facility site alternatives. We also considered the potential impacts to environmental resources and land uses in our alternatives analysis and evaluated alternatives that would avoid or minimize impacts to environmental resources such as wetlands and waterbodies, land uses such as timber production, and federally and state managed lands.

The following evaluation criteria were used to determine whether or not alternatives would be environmentally preferable:

- Significant environmental advantage over the proposed Project;
- Ability to meet the proposed Project objectives; and
- Technical and economic feasibility and practicability.

4.1 NO-ACTION OR POSTPONED-ACTION ALTERNATIVES

The Commission has three alternative courses of action in processing an application for a Certificate: (1) grant the certificate with or without conditions; (2) deny the Certificate; or (3) postpone action pending further study.

Implementation of the No-Action alternative would require the Commission to deny Gulf South a Certificate to construct, own, operate, and maintain the proposed Project. Without the issuance of a Certificate, Gulf South would not be able to construct the proposed Project, and therefore the environmental impacts identified in this EIS would be eliminated; however, the objectives of the proposed Project would not be met, and it is likely that customers would seek alternative projects and/or sources of energy that may result in greater impacts than those described in this EIS. As discussed in Section 1.1, nationwide consumption of natural gas is projected to increase by more than 20 percent by 2030, and natural gas derived from domestic sources will account for the majority of the total U.S. consumption (EIA, 2007). By 2025, natural gas demand in the Northeast and Midwest regions is projected to increase by 13 and 25 percent, respectively (EIA, 2006b). Onshore production of natural gas from unconventional sources (e.g., shale, tight sands, and coal bed methane) is expected to be a major contributor to future domestic natural gas supplies (EIA, 2007). The proposed Project would supply up to 1.272 Bcf/d of natural gas from unconventional sources (i.e., Bossier Sand and Barnett Shale fields). Since the objectives of the proposed project would not be met by implementing the No-Action alternative and the effects of other customer driven projects are unknown, we believe that this alternative is not preferable to the proposed action.

Implementation of the Postponed-Action alternative would require the Commission to delay its determination on whether or not to grant Gulf South a Certificate. Postponing the Commission's action on this application could allow for further study of the environmental impacts resulting from construction and operation of the proposed Project; however, postponement would at the minimum delay and could

also change the environmental impacts described in this EIS. Based on the information provided in Gulf South's application, its subsequent filings and responses to environmental information requests, our analysis of this information, and consultations with other responsible state and federal resource agencies; we believe that use of the Postponed-Action alternative to allow for further study of the proposed Project is not necessary at this time and that delaying the effects described in this EIS would not significantly change these effects; therefore, we believe that this alternative is not preferable to the proposed action.

Alternative Energy Sources

Several alternative energy sources to natural gas currently exist, including petroleum and coal based energy, nuclear power, hydropower, and other energy sources that include renewable energy technologies. Petroleum and coal-based energy are commonly used and found throughout the U.S.; however, relative to natural gas, the use of petroleum or coal-based energy would result in greatly increased emissions of pollutants, such as NO_x, SO_2, and CO_2. The increased emission of pollutants would result in reductions to air quality. In addition, the use of petroleum and coal-based energy would result in numerous secondary impacts associated with their mining, extraction, transportation, and refinement. The use of this alternative would not meet the proposed Project's objectives and would not likely result in a significant reduction of environmental impacts; therefore, we believe use of this energy source is not preferable to the proposed action.

Although there has recently been renewed interest in nuclear power production, growth in nuclear generating capacity will account for only about 10 percent of total U.S. generating capacity by 2019, and it is expected to remain at that level through 2030 (EIA, 2006a). Additionally, regulatory requirements, cost considerations, and public concerns make it unlikely that new nuclear power plants would be sited and developed to serve the markets targeted by the proposed Project within a timeframe that would meet the objectives of the proposed Project; therefore, we believe use of this energy source is not preferable to the proposed action.

Though efficiency upgrades at existing hydropower facilities are expected to produce incremental additions of power production in the coming years, it is unlikely that new and/or significant sources of hydropower would be permitted and brought on-line as reliable energy source alternatives to the proposed Project. Federal, state, and local initiatives will likely contribute to an increase in the availability and cost effectiveness of non-hydropower renewable energy sources, such as wind, solar, tidal, geothermal, and biomass. For example, state and local initiatives have increased the availability of wind power-derived energy to local consumers in Texas (Texas Renewable Energy Industries Association 2006), and renewable energy is playing a larger role in the Mid-Atlantic and Northeast regions of the United States (CSC, 2004; New York State Energy Research and Development Authority, 1999). Still, the percentage of electricity generated from non-hydropower renewable energy sources at the national level is projected to increase to only 3.2 percent by 2025 (EIA, 2006a), which would offset only a small part of the projected national energy demands; therefore, we believe that these other energy sources would not be able to meet the overall objectives of the proposed Project and as a result are not preferable to the proposed action.

Energy Conservation Alternatives

An increase in the scope of energy conservation measures employed throughout the market area served by the proposed Project could also potentially decrease or slow the amount of increase in the nation's energy demand. However, as noted in Section 1.1, energy demand in the United States has been increasing steadily, with total energy consumption in the United States estimated to increase from 100.2 quadrillion BTU per year in 2005 to 131.2 quadrillion BTU per year in 2030 (EIA, 2007). Natural gas usage will represent about 22 percent of all energy consumption in the United States by 2025. To

maintain pace with growing energy demands, the EIA anticipates that consumption of natural gas in the United States will grow from 22.4 Tcf per year in 2005 to 26.1 Tcf by 2030. The growth in natural gas demand is being driven primarily by increased use of natural gas for electricity generation and industrial applications. Given the anticipated increases of energy consumption over the next 20 years, it is unlikely that voluntary energy conservation measures would be sufficient to offset increasing demand in general or affect the need for the proposed Project in particular.

4.2 SYSTEM ALTERNATIVES

System alternatives are alternatives to the proposed action that would make use of existing, modified, or proposed pipeline systems to meet the stated objectives of the proposed Project. Implementation of a system alternative would make it unnecessary to construct the proposed Project, although some modifications or additions to existing or proposed pipeline systems may be required to meet the objectives of the proposed Project. Modifications or additions to existing or proposed pipeline systems would result in environmental impacts that may be less than, similar to, or greater than those associated with construction and operation of the proposed Project. The purpose of identifying and evaluating system alternatives is to determine whether or not the environmental impacts associated with the construction and operation of the proposed Project would be avoided or reduced by using existing, modified, or proposed pipeline systems.

Our analysis of system alternatives includes an examination of existing and proposed natural gas systems that currently or would eventually serve the markets targeted by the proposed Project, and considers whether those systems would meet the proposed Project's objectives while offering an environmental advantage over the proposed Project.

Gulf South, because of its extensively interconnected system, would appear to have the sole potential existing pipeline system that could be used for a system alternative meeting the purposes or a portion of the purposes of the Southeast Expansion Project. However, use of Gulf South's system as a system alternative to the Southeast Expansion Project is very limited. Gulf South's existing pipeline system in the central Mississippi area is mostly low-pressure or medium-pressure pipeline and is mostly dedicated to a type of service that requires unpredictable contractual commitments. In addition, Gulf South has no available high-pressure take-away capacity from the central Mississippi area. Gulf South's high-pressure north-south Index 130 pipeline, which extends from Bayou Sale, Louisiana, to Kosciusko, Mississippi, is sold out of capacity at its MAOP. Because of these existing pipeline capacity constraints, the use of Gulf South's existing facilities to make the level of deliveries requested by the market are not a viable alternative. New pipeline and compression, such as that proposed for the Southeast Expansion Project, would have to be constructed to alleviate the new capacity constraints developing in the Perryville-Harrisville area and to provide additional outlets for new supplies.

Our engineering staff evaluated other potential system alternatives to Gulf South's expansion, using proposed pipeline systems such as Transcontinental Gas Pipe Line Company, and planned or proposed projects such as the Southeast Supply Header Project, the East Texas to Mississippi Expansion Project, and the currently-constructed Carthage to Perryville Expansion Project. Staff found that no other interstate pipeline systems in the region could serve Gulf South's customers without having to construct additional facilities that would result in environmental impacts similar to or greater than Gulf South's proposed Project.

4.3 ROUTE ALTERNATIVES

Route alternatives represent potential routes that the proposed Project could follow that vary significantly from the proposed route. A route alternative would deviate from the proposed route for its

entire length or at least a large portion of its total length. Based on input provided to us by the general public, as well as federal and state resource agencies, and our review of the proposed Project, we identified and evaluated one major route alternative to the proposed Project route: Major Route Alternative A (Alternative A). Both Alternative A and the proposed Project are summarized in Table 4.3-1 and discussed further below.

It should be noted that Alternative A and the proposed Project only differ in the westernmost sections of their respective routes (i.e., from MP 0 to approximate MP 38.3 on the preferred route). For the last approximately 72 miles, both routes are the same, collocating with the same existing rights-of-way to the terminus at Transco Station 85. Both routes begin at the proposed Harrisville Compressor Station and end at the existing Transco Station 85. Furthermore, the same aboveground facilities, including compressor stations, mainline valves, and interconnects, would be necessary for both Alternative A and the proposed Project. Thus, aboveground facilities are not discussed further in the consideration of route alternatives. However, alternative compressor station sites are discussed later in this section.

TABLE 4.3-1
Comparison of Route Alternatives to the Proposed Southeast Expansion Project

Comparative Category	Unit	Proposed Project[a,b]	Major Route Alternative A
Facility Requirements			
Pipeline length	Miles	110.8	116.0
Compressor station requirements	Hp/Number of engines	8,290/3 (new compressor station) 18,940/4(new compressor station) 7,100/2 (new compressor station)	8,290/3 (new compressor station) 18,940/4 (new compressor station) 7,100/2 (new compressor station))
Land Requirements[b]			
Construction right-of-way	Acres	1,240.3	1,337.9
Permanent right-of-way	Acres	731.4	779.0
Environmental Considerations[c]			
Land use, upland forest	Acres (Temporary/Permanent)	492.9/301.2	572.0/343.7
Land use, pasture	Acres (Temporary/Permanent)	51.5/31.0	124.5/74.7
Waterbody crossings[c]	Number	101	125
Wetlands crossed	Acres (Temporary/Permanent)	28.37/8.33	51.20/5.10

_____
Notes:
a Values reported are based on actual data but may differ from other values reported elsewhere in this document so that the proposed Project can be compared to Alternative A.
b Land requirements reported assume a 100-foot-wide construction right-of-way and a 60-foot-wide permanent right-of-way. Wetland acreages for the Proposed Project were based on a 75-foot temporary construction right-of-way and a 30-foot-wide permanent right-of-way.

c Based on actual data for the proposed Project and U.S. Geological Survey topographic maps for Alternative A. For wetlands and waterbodies, actual numbers were used for the proposed Project, whereas acreage for Alternative A was determined from aerial photography. Numbers may differ from other portions of the EIS because the numbers in this table reflect only the portion of the proposed Project from MP 0.0 to 38.3.

Alternative A would traverse north from the proposed Harrisville Compressor Station and parallel Gulf South's Index 130 pipeline for approximately 0.7 mile before turning east and traversing "greenfield" (i.e., not parallel to other pipeline or utility corridors) for approximately 2 miles. The pipeline route would then turn to the northeast and parallel the corridor of a CO_2 (carbon dioxide) pipeline owned by Denbury for approximately 3.3 miles. The pipeline route would then traverse more greenfield for 2 miles and intersect a 12-inch pipeline owned by Crosstex in Rankin County, Mississippi. The pipeline route would parallel the Crosstex pipeline, trending east-southeast for approximately 31.3 miles until joining the proposed route.

This alternative route would be approximately 5 miles longer than the proposed route, and based on a review of topographic maps would affect a similar amount of resources, including waterbodies, wetlands, vegetation, and wildlife, as the proposed route. Environmentally, this route alternative would result in some impacts slightly greater than those of the proposed route by impacting 97.6 additional acres of land, 79.1 acres more upland forest, 22.83 acres more wetlands, and crossing 24 more streams. However, this alternative would pass within 50 feet of 12 residences (versus 13 for the proposed route) and run parallel to existing pipelines for 112.0 miles of its 116.0-mile (97 percent) route, as compared to 72.7 of 110.8 miles (66 percent) for the proposed route. The collocation along the relatively unknown location of the older Crosstex pipeline would be difficult to achieve without a sufficiently safe offset.

Because Alternative A would result overall in greater environmental impacts, would require more pipeline length, and would be collocated with approximately the same amount of usable existing utility rights-of-way, we believe that the advantages of the proposed Project route would outweigh the disadvantages, and we do not recommend the use of Alternative A.

4.4 ROUTE VARIATIONS

Route variations differ from system or major route alternatives in that they are identified to resolve or reduce construction impacts to localized, specific resources, such as cultural resource sites, wetlands, recreational lands, residences, terrain conditions, and to accommodate landowner requests. Because route variations are identified in response to specific local concerns, they are usually the result of landowner comments. While route variations may be a few miles in length, most are relatively short and in general proximity to the proposed Project. We have considered a variety of factors in identifying and evaluating route variations, including length, land requirements, the number of landowners affected, and potential for reducing or minimizing impacts to natural or cultural resources. During the pre-filing process, Gulf South refined its proposed route based on discussions with landowners, resource stewards, project engineers, and our input to avoid or minimize impacts to natural or cultural resources, reduce or eliminate engineering and constructability concerns, and/or avoid or minimize conflicts with existing land uses.

As part of its Project development and route selection process, Gulf South identified a total of 16 minor route variations to the originally filed route that have been incorporated into the proposed Project route and which are incorporated into this EIS. These minor variations were developed based on discussions with landowners and resource stewards to avoid or minimize impacts to natural or cultural resources, and minimize conflicts with existing or proposed residential and agricultural land uses, as well as with project engineers, to reduce or eliminate engineering and constructability concerns. Each of these minor route variations is summarized in Table 4.4-1 and depicted in Figures H-1 through H-16 of Appendix H of this EIS. We have evaluated each of these minor route variations and considered their associated environmental consequence as part of our environmental analysis of the proposed Project provided in Section 3.0.

TABLE 4.4-1
Route Variations Adopted for the Proposed Southeast Expansion Project

Mileposts		County, State	Length (miles)	Land Use	Reason for Adoption
Begin	End				
1.29	1.69	Simpson, MS	0.40	Forest, planted pine, and forested wetland	Avoids a residential property and an environmentally sensitive feature.
5.24	5.72	Simpson, MS	0.48	Forest and commercial/industrial	Avoids an environmentally sensitive feature.
10.65	11.39	Simpson, MS	0.74	Industrial/commercial, forest, and open land	Slight shift in the route to avoid a landowner who denied permission to survey.
14.28	14.69	Simpson, MS	0.41	Forest	Avoids an environmentally sensitive feature.
15.04	16.15	Simpson, MS	1.11	Forest, pine plantation, and forested wetland	Straightens route to avoid false right-of-way for pullback string associated with Campbell's Creek HDD.
24.92	25.58	Simpson, MS	0.66	Forest and open land	Avoids impacts to a residential area.
38.74	39.12	Smith, MS	0.38	Forest	Shifts line to the north to lessen impact to a pond and an environmentally sensitive feature.
39.47	40.55	Smith, MS	1.08	Forest, pine plantation, and forested wetland	Line shift to avoid parallel creeks and an environmentally sensitive feature.
43.92	45.17	Smith, MS	1.25	Forest, pine plantation, and open land	Accommodates the straight crossing of Leaf River to avoid false right-of-way for pullback string.
45.46	46.87	Smith, MS	1.41	Forest, open land, commercial/industrial, and forested wetland	Avoids an environmentally sensitive feature.
54.24	54.97	Jasper, MS	0.73	Forest	Avoids an environmentally sensitive feature.
55.57	56.87	Jasper, MS	1.30	Forest and pine plantation	Accommodates a straight section for the HDD crossing Tallahoma Creek to avoid false right-of-way for pullback string.
74.69	74.93	Jasper, MS	0.24	Forest	Crossover of existing parallel pipeline was relocated to avoid difficult construction conditions.
82.06	83.20	Clarke, MS	1.14	Forest, wetland (forested, emergent, and scrub-shrub)	Crossover of existing parallel pipeline was relocated to accommodate new location for Destin Compressor Station and M&R Station, which were relocated to avoid wetland impacts on the previous site.
87.56	89.57	Clarke, MS	2.01	Forest, open land, pasture, and forested wetland	Avoids wetlands, an active horse farm, and an environmentally sensitive feature.
94.67	95.17	Clarke, MS	0.50	Planted pine and residential	Avoids a residential property and an environmentally sensitive feature.

Gulf South has indicated that other minor route variations may be necessary as they continue to negotiate with landowners.

Based on our review of the proposed Project route, Gulf South's proposed measures, and our recommendations, we believe that the proposed route's impacts to sensitive environmental resources and special land uses would be adequately avoided or minimized.

4.5 ABOVEGROUND FACILITY ALTERNATIVES

We evaluated the proposed locations of the aboveground facilities for the Southeast Expansion Project to determine whether environmental impacts would be reduced or mitigated by use of alternate facility sites. Our evaluation involved inspection of aerial photographs and maps, as well as site visits along the proposed Project corridor. The aboveground facilities for the proposed Project include three new compressor stations and five M/R stations with associated piping (see Section 2.1). Eight mainline valves and two pig launcher/receiver stations would also be constructed in association with the proposed Project. Because two of the mainline valves and both of the pig launcher/receiver facilities would be located within the confines of a proposed compressor station and/or M/R station site, we did not consider alternatives for those facilities.

Because the location of the M/R stations would be linked to the location of the associated natural gas receipt and interconnect points, the search for alternatives was constrained to sites located adjacent to the intersection of the proposed Project route and the planned and existing pipeline facility locations. Similarly, the locations of mainline valves would also be linked to the location of the proposed Project route. Furthermore, the proposed locations of mainline valves along the proposed Project route were largely determined based on DOT safety regulations that specify the maximum distance between sectionalizing block valves and also require that these facilities be located in readily accessible areas. We did not identify any alternative sites for the proposed M/R, mainline valve facilities, or the pig launcher/ receiver facilities that would offer a significant environmental advantage to the proposed sites.

As with the other proposed aboveground facilities, the compressor station locations would be constrained to sites near the proposed Project route. Specifically, the proposed compressor station sites along the proposed Project route were largely dictated based on engineering and economic design standards. The Harrisville Compressor Station would be located at MP 0.0 in Simpson County, Mississippi; the Destin Compressor Station would be located at MP 83.0 in Clarke County, Mississippi; and the Delhi Compressor Station would be built approximately 89 miles to the northwest of the Project in Richland Parish, Louisiana. As described in Section 3.8, construction and operation of the Delhi, Harrisville, and Destin Compressor Stations would result in a permanent conversion of approximately 69.5 acres of agriculture, 26.9 acres of upland forest, and 11.7 acres of pine plantation, respectively. A total of four waterbodies would be affected at these proposed compressor station locations. We have determined that operation of these facilities would not result in significant air quality degradation or noise impacts to any nearby residents given measures proposed by Gulf South and our recommendations (see Section 3.11).

4.5.1 Delhi Compressor Station Site Alternatives

In order to meet the project's stated goals and objectives, the Delhi Compressor Station must be located in the proximity of the new receipt point associated with CenterPoint's Carthage to Perryville Project in Richland Parish, Louisiana. Two locations were evaluated for the Delhi Compressor Station: (1) a location in an active agricultural field to the south of the CGT facility, and (2) a location immediately to the north of that agricultural field, between that location and CGT's facility (see Figure 4.5-1). No significant environmental constraints appear to be present at either location. CenterPoint Energy and DEGT are purchasing the site to the north of the agricultural field for facilities associated with their SESH Project. Therefore, the only alternative location remaining is in the agricultural field, where Gulf South proposes to construct the Delhi Compressor Station. One stream feature exists across

the proposed alternative site, which will be rerouted around the proposed facility to maintain its flow regime across the property.

As can be seen in Figure 4.5-1, alternative sites for the Delhi Compressor Station are limited by existing land use. The Delhi Municipal Airport lies to the west of the proposed Delhi Compressor Station site. The airport and the flight paths associated with the airport make the eastern half of the Dunn and Delhi, Louisiana, USGS 7.5 minute quadrangle map, Section 36, undesirable. Similarly, only the western half of the Dunn and Delhi, Louisiana, USGS 7.5 minute quadrangle map, Section 31, is available, as Bayou Macon forms the eastern boundary of the parish. Gulf South's project requires setting the compressor station in the proximity of the CenterPoint Carthage to Perryville Project terminus – at the CGT Compressor Station shown as a pumping station on Figure 4.5-1. Eliminating as much distance as possible from this location would shorten the flow lines between the two stations and lessen environmental impacts and landowner inconvenience. Only two parcels of land are available as discussed above. Gulf South has proposed to place its Delhi Compressor Station boundary at the northern property boundary to lessen the length of the flow lines. In addition, Gulf South is proposing to locate the station directly south of the CGT station, again to shorten the length of the flow lines and provide greater flexibility in locating the lines in conjunction with the proposed CenterPoint/DEGT SESH Compressor Station.

With implementation of our recommendations as identified in Section 3.0 of this EIS, we identified no other sites preferable to that of Gulf South's proposed Delhi Compressor Station site.

4.5.2 Harrisville Compressor Station Site Alternatives

From a system design perspective, the Harrisville Compressor Station must be located at the intersection of Gulf South's existing Index 130 pipeline and the new 42-inch pipeline being proposed. Two locations were evaluated for the Harrisville Compressor Station: (1) an alternate location immediately adjacent to Gulf South's existing Index 130 pipeline, and (2) the proposed location 500 feet to the east of the Index 130 pipeline (see Figure 4.5-2). Both locations are within managed pine forest, but the location 500 feet to the east of the Index 130 pipeline offers better access to an existing access road and has much less variation in topography. One stream appears on this property. While both locations are approximately 2,500-2,600 feet from the nearest NSAs associated with the First Presbyterian Twin Lakes Camping Area located to the north, the proposed location is slightly more removed from the camping area. Therefore, in the absence of additional environmental constraints, Gulf South has chosen to construct the Harrisville Compressor Station at the location 500 feet to the east of the Index 130 pipeline.

Our environmental review did not identify any significant environmental advantage of the alternate site. Therefore, we believe that adoption of the alternative site for the Harrisville Compressor Station is not recommended.

4.5.3 Destin Compressor Station Site Alternatives

The purpose of the Destin Compressor Station is to increase the pressure of the gas in the Southeast Expansion Project pipeline to meet the operating pressure of the Destin pipeline. The Destin Compressor Station would be located at approximately MP 82.9 in Clarke County, Mississippi, and in the proximity of the Destin pipeline system. Two locations were evaluated for the Destin Compressor Station: at the northeastern and southeastern quadrants of the intersection of the Southeast Expansion Project pipeline with Destin's pipeline (see Figure 4.5-3). Both locations have similar land use, managed timber, and appear to have equivalent access to the Destin facilities, and are near the same residences.

However, impacts to wetlands are greater on the northeastern site. Therefore, we believe that adoption of the alternative site for the Destin Compressor Station is environmentally preferable.

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Page 4-10
Figure 4.5-1
Alternatives for the Delhi Compressor Station

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Figure 4.5-2
Alternatives for the Harrisville Compressor Station

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Figure 4.5-3
Alternatives for the Destin Compressor Station

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5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF THE STAFF'S ENVIRONMENTAL ANALYSIS OF THE PROPOSED ACTION AND ALTERNATIVES

We conclude that construction and operation of the proposed Project would result in limited adverse environmental impacts based on information provided by Gulf South and data developed from information requests; field investigations; literature research; alternatives analysis; comments from federal, state, and local agencies; input from public groups and individual citizens; and the mitigation measures recommended below.

As part of our review, we developed specific mitigation measures that we believe would appropriately and reasonably reduce the environmental impacts resulting from construction and operation of the proposed Project. We believe that environmental impacts would be minimized if the proposed Project is constructed and operated in accordance with applicable laws and regulations, Gulf South's proposed mitigation and implementation of a third-party environmental inspection and monitoring program, and our additional recommended mitigation measures. We are therefore recommending that our mitigation measures be attached as conditions to any authorization issued by the Commission. A summary of the anticipated Project impacts and our conclusions are provided below by resource area.

5.1.1 Geology

Construction and operation of the proposed Project would have minimal impact on geological resources. The primary effect of Project construction would be temporary disturbances to the existing topography along the proposed pipeline construction right-of-way, but all areas disturbed during pipeline construction would be finish-graded and restored as closely as possible to preconstruction contours during cleanup and restoration. Additionally, no bedrock blasting is anticipated for the proposed Project. The proposed Project would be located in a region with a low risk of seismic activity, soil liquefaction, landslide susceptibility, and subsidence. No known paleontological resources would be affected by the proposed Project, although Gulf South has developed an unanticipated discovery plan in the event that paleontological resources are found during construction, which we find acceptable.

Given the level of impacts and impact avoidance, minimization, and mitigation measures proposed by Gulf South, we believe that the proposed Project would not have significant impacts on geological resources.

5.1.2 Soils

The proposed Project would traverse a variety of soil types and conditions, and about 58 percent of the soils that would be affected by the proposed pipeline are classified as prime farmland; however, most of this is currently occupied by either upland forest or pine plantation. Construction activities associated with the proposed Project, such as clearing, grading, trenching, and backfilling, would adversely affect soil resources by resulting in erosion, compaction, and the loss of soil productivity and fertility by mixing of topsoil and subsoil horizons and changing drainage patterns. Such effects would be of particular concern in agricultural areas. Gulf South would implement the mitigation measures contained in its plans to control erosion, ensure successful revegetation, and minimize any potential adverse impacts to soil resources. Specifically, potential soil impacts to agricultural areas would be mitigated through measures such as erosion control, topsoil stripping, compaction testing and treatment, and monitoring of crop yields to ensure that those yields in areas affected by construction were similar to those in adjacent, undisturbed areas. Gulf South would further limit potential impacts to soil

resources by implementing its project-specific SPCC Plan and its *Plan for the Unanticipated Discovery of Contaminated Environmental Media*, which we find acceptable.

Given the impact minimization and mitigation measures proposed by Gulf South, we believe that construction and operation of the proposed Project would not result in long-term impacts to soils.

5.1.3 Water Resources

Construction and operation of the proposed Project would be conducted in accordance with Gulf South's Procedures. Gulf South would avoid significant impacts to sole-source aquifers, wellhead protection areas, public potable water intakes, drinking water wells, and springs by implementing the measures described in its Procedures, SPCC Plan, and our recommendation that Gulf South offer testing and, if applicable, mitigation for private or domestic water wells damaged by construction.

The proposed Project would cross 103 perennial streams, 196 intermittent streams, and 9 ponds. Most minor and intermediate waterbodies and 7 ponds would be crossed using open-cut methods. Potential effects to major and sensitive waterbodies would be largely avoided through implementation of HDD installation techniques, which would be used to accomplish pipeline installation across 29 waterbodies. Waterbodies that would be crossed using HDDs include each of the navigable rivers (including the Leaf and Chickasawhay Rivers, and Bucatunna and Okatuppa Creeks), two NRI-listed streams (the Chickasawhay and Strong Rivers), the rivers most likely to contain habitat for federally-listed species (including Dabbs Creek, Leaf River, West Tallahala River, Chickasawhay River, Bucatunna Creek, and Strong River), and all three of the impaired waterbodies (Tallahala, Campbell, and Dabbs Creeks) that occur along the proposed Project route. To ensure that impacts related to the crossing of the NRI-listed streams would be sufficiently minimized, we are recommending that Gulf South consult further with the NPS and file a report summarizing these consultations and identifying any mitigation measures Gulf South would implement. Several ponds are located in the immediate vicinity of the proposed pipeline, including some that are fed by waterbodies proposed to be crossed and could be adversely affected by construction activities. We are recommending that Gulf South prevent sediment and heavily silt-laden water from entering these specifically identified ponds.

All waterbody crossings would be conducted in accordance with Gulf South's Procedures and the terms of any applicable federal or state permits that may be issued. Gulf South's Procedures are consistent with our Wetland and Waterbody Construction and Mitigation Procedures with one exception; therefore, we are recommending that Gulf South file copies of approvals or concurrences from the State of Alabama indicating that construction through waterbodies between December 1 and May 31 is acceptable. Gulf South would use numerous access roads during construction, several of which may affect surface waterbodies. However, Gulf South has not indicated how these access roads would be constructed; therefore, we are recommending that Gulf South file additional information on the impacts of the access roads on surface waterbodies. Several waterbodies were identified by Gulf South as being potentially affected at the proposed aboveground facilities. We are recommending that Gulf South file site-specific construction plans to further identify and describe waterbodies at aboveground facilities and the potential impacts and mitigation measures for these waterbodies.

Gulf South's HDD Plan describes the measures that would be implemented to monitor for, contain, and clean up any inadvertent releases of drilling fluids during HDD operations. Gulf South's HDD Plan also describes measures that would be followed in the event of an HDD failure. To further minimize the impacts of HDD failures, we are recommending that Gulf South prepare site-specific construction plans prior to open-cutting any surface waters previously designated as HDD crossings.

Gulf South has proposed to use surface waters for hydrostatic testing of the proposed pipeline, though municipal water supplies may be used as test water sources for some prefabricated aboveground facility sites. Gulf South would also avoid or adequately minimize potential effects to waterbodies resulting from hydrostatic testing by implementing Gulf South's Procedures and adhering to local, state, and federal water withdrawal and discharge permits.

Given the minimization measures proposed by Gulf South and our recommendations, we believe that short-term impacts resulting from construction and operation of the proposed Project would not significantly affect groundwater or surface water resources.

5.1.4 Wetlands

Construction of the proposed Project pipeline would affect 145 wetland areas, resulting in a total of approximately 68.9 acres of wetland disturbance, including approximately 38.6 acres of forested wetlands, 2.2 acres of mixed-type wetlands that include a forested wetland component, and an additional 28.07 acres of shrub-scrub, emergent, and open water wetlands. No wetlands would be affected by the construction or operation of the aboveground facilities. During operations, approximately 16.4 acres of forested wetlands and 0.9 acre of mixed-type wetlands containing a forested component would be contained within the maintained portion of the proposed permanent pipeline right-of-way.

Construction and operation of the proposed Project would result in short-term and long-term impacts to wetlands. Gulf South would minimize effects to wetlands by completing all wetland crossings in accordance with its Procedures, and by complying with the terms and conditions of other state and federal permits, including the provisions of any required wetland compensatory mitigation. Gulf South would also minimize effects to wetlands by reducing the construction right-of-way width in wetlands to 75 feet. To reduce impacts to sensitive, high-quality, forested wetlands, Gulf South proposes to reduce its construction right-of-way width and attempt to avoid large tupelo and cypress trees that it encounters. Following construction, affected wetlands located outside the maintained portion of the permanent pipeline right-of-way would be allowed to revert to preconstruction conditions.

5.1.5 Vegetation

In addition to wetlands, construction and operation of the proposed Project would affect three upland vegetative communities: upland forest, pine plantation, and open lands (scrub-shrub habitats, pasture, herbaceous, and agricultural lands). Approximately 74 percent of the upland vegetation resources affected during construction would consist of pine plantation and upland forest, with open lands, agriculture, and pasture making up the remainder. Vegetative communities of special concern include NRCS-administered CRP lands.

Gulf South would restore all disturbed vegetated areas in accordance with its Plan and Procedures and the specific recommendations of local agencies and soil conservation services. Affected agricultural and open lands typically would be revegetated within one or two growing seasons, but impacts to pine plantations and upland forest would be long-term, taking up to 30 years or more to recover. Impacts to forested areas contained within the permanent pipeline right-of-way would also represent a more substantial change in vegetative strata. Impacts to forested areas, including large forested tracts, would be minimized by routing the proposed Project along existing rights-of-way and through other previously disturbed areas, such as agricultural and open lands, where possible. Additionally, many of the large forested tracts crossed by the proposed Project are subject to some disturbance associated with timber management programs. To minimize construction-related impacts to vegetative resources, we are recommending that, prior to construction, Gulf South complete consultation with several agencies regarding impacts to vegetation communities of special concern, seeding and

vegetation restoration practices, and develop plans to control the spread of exotic and/or invasive plant species in areas affected by construction.

Based on Gulf South's proposed measures to avoid and minimize impacts to forested areas; the relatively minor impacts to forested areas, pastures, and open lands; the implementation of Gulf South's plan; and the implementation of our recommendation, we believe that impacts to vegetative communities would be minor.

5.1.6 Wildlife and Aquatic Resources

The wetlands and upland vegetation communities crossed by the proposed Project route support habitats that provide cover and forage for a variety of wildlife species, including birds, mammals, reptiles, and amphibians. Physical disturbance, displacement, and clearing of herbaceous upland and wetland habitats would affect wildlife at or near the time of construction, but such effects would be largely temporary and many habitats would generally recover quickly following construction. Upland and wetland forested habitats would be affected, with a long-term conversion of wooded areas to successional stages in the temporary construction right-of-way and a permanent conversion to scrub-shrub or herbaceous levels within the permanent pipeline right-of-way. The proposed Project route would be collocated with or parallel to existing utility rights-of-way where possible to minimize impacts to previously undisturbed vegetation and wildlife habitat, and Gulf South would further minimize impacts to wildlife habitat through implementation of its Plan and Procedures.

The waterbodies that would be traversed by the proposed Project provide habitat for a variety of aquatic species, including warmwater fishes and mussels. Potential impacts to fisheries and aquatic habitats would include sedimentation and turbidity, loss of cover, introduction of pollutants into the aquatic environment, potential blockage of fish migrations and interruptions of spawning, and entrainment or loss of stream flow during hydrostatic testing. As described above, all waterbody crossings would be accomplished in accordance with Gulf South's Procedures and the terms of any applicable federal or state permits that may be granted. Direct impacts would be avoided by the use of HDD installation at 29 waterbody crossings, and aquatic habitat impacts at other crossing locations would be largely temporary, as crossings would be completed in less than 48 hours in most instances. Additionally, intake screening to limit entrainment of fishes and maintenance of adequate stream flow rates to protect aquatic life during hydrostatic test water withdrawals would further ensure that any Project-related impacts to aquatic habitat would be minor and temporary.

Given the minor and largely temporary impacts and the minimization measures proposed by Gulf South, we believe that the proposed Project would not significantly affect aquatic habitat and wildlife species.

5.1.7 Threatened, Endangered, and Special Status Species

Based on consultations with the FWS, 10 federally listed endangered or threatened species potentially occur in the vicinity of the proposed Project. In addition, the proposed Project would also traverse Gulf sturgeon critical habitat. Based on our review of these species and the potential impacts to them resulting from construction and operation of the proposed Project, we have determined that the proposed Project would result in no effect to the red-cockaded woodpecker and the inflated heelsplitter; and may affect but is not likely to adversely affect the Louisiana black bear, eastern indigo snake, yellow-blotched map turtle, ringed map turtle, gulf sturgeon (including its critical habitat), bald eagle, and the wood stork; and may affect the gopher tortoise. As required by the ESA, our determination of may affect required us to enter into formal consultation with the FWS. As a result of this formal consultation, the FWS issued a BO for the proposed Project concurring with our determinations, and determined that the

proposed Project is not likely to jeopardize the continued existence of the gopher tortoise and is not likely to adversely modify designated critical habitat and issued an incidental take statement. In its BO, the FWS identified several non-discretionary terms and conditions that must be adhered to, and three discretionary conservation recommendations to further protect the gopher tortoise and its habitat. In order to ensure that the gopher tortoise is sufficiently protected and to ensure compliance with FWS terms and conditions, we are recommending that Gulf South file a revised Conservation Strategy for the Gopher Tortoise and the Eastern Indigo Snake consistent with the FWS terms and conditions as well as two of its three conservation recommendations.

Since the issuance of the BO, Gulf South has modified its proposed route, identified new access roads and ATWSs, and has identified a new location for the proposed Destin Compressor Station. For these modifications, Gulf South has compiled additional information on species occurrence and habitat that has not been reviewed by the FWS; therefore, to ensure that the modified work areas are properly reviewed for the presence or absence of federally listed species and their habitats, and that any associated mitigation or construction-related activities are in accordance with applicable FWS requirements, we are recommending that Gulf South not begin construction in those areas until all Section 7 consultations are completed.

In addition to federally listed species, 46 species are listed as either endangered, threatened, imperiled, or rare by the states of Mississippi, Louisiana, and Alabama. To ensure the protection of these species, we are recommending that, prior to construction, Gulf South conduct additional consultations with MDWF, LDWF, and ADCNR, complete any required additional surveys, and implement agency-recommended mitigation measures, if required, to ensure that potential Project-related effects to all special status species are adequately avoided or minimized.

5.1.8 Land Use, Recreation and Special Interest Areas, and Visual Resources

Construction of the proposed Project would affect approximately 1,726 acres of land, including 1,240 acres for the pipeline construction right-of-way, 146 acres for the aboveground facilities, and 340 acres for extra work areas (ATWSs, pipe storage and contractor yards, and access roads). Approximately 71 percent of the 1,726 acres within the Project construction right-of-way is currently characterized as pine plantation and forestland, with agriculture, pasture, and open lands accounting for an additional 18 percent of this acreage. The remaining 11 percent is comprised of residential, industrial/commercial, wetlands, and other/roads land use areas. Gulf South proposes a nominal construction right-of-way width of 100 feet and a permanent right-of-way width of 60 feet, with the pipeline placed at an offset within this permanent right-of-way. However, we have determined that these right-of-way requirements are in excess of what is necessary for normal construction and operation. Therefore, in order to reduce permanent impacts, we are recommending that Gulf South not exercise eminent domain authority granted under the NGA to acquire a permanent right-of-way greater than 50 feet in width. In order to further reduce right-of-way impacts, we are recommending that Gulf South evaluate using at least 10 feet of any adjacent paralleled natural gas pipeline rights-of-way for spoil storage.

Following construction, all affected areas outside the permanent pipeline right-of-way and aboveground facility sites would be restored and/or allowed to revert to approximate preconstruction conditions and uses. During operation of the proposed Project, the permanent pipeline right-of-way, aboveground facilities, and permanent access roads would encumber approximately 857.6 acres (based on Gulf South's proposed 60-foot-wide permanent right-of-way).

Thirteen residences would be located within 50 feet of construction work area. Gulf South has adopted general residential construction mitigation measures for these residences and has developed site-

specific construction plans for three residences that would be within 25 feet of the construction work areas in order to avoid or minimize potential impacts to these structures. We have reviewed these plans and find them acceptable.

Visual resources along the proposed Project route would be affected by the installation of some aboveground facilities and alteration of existing vegetative patterns associated with clearing and maintenance of the construction and permanent pipeline rights-of-way. The installation of the proposed aboveground facilities would not result in significant visual effects on residences; however, we are recommending that, prior to construction, Gulf South address visual resource impacts for residences in the area of the proposed Delhi Compressor Station for the potential need for visual screening.

The proposed Project would cross several CRP lands. In the instances where permits and approvals for proposed Project-related use and impacts to these resources are outstanding, we are recommending that, prior to construction, Gulf South complete consultations with the applicable agencies and file site-specific plans to avoid, minimize, or mitigate impacts to these areas.

To ensure that Gulf South takes into consideration operational and safety concerns regarding potential impacts on two nearby airport facilities posed by the Project, we are recommending Gulf South provide site-specific construction plans resulting from ongoing consultations with airport and local officials for the Delhi Municipal Airport and the Thigpen Field Airport that address any concerns identified by those authorities.

The proposed Project would result mostly in short-term impacts with some permanent long-term impacts to pine plantation and forestland in the proposed permanent right-of-way. However, based on Gulf South's proposed construction and mitigation measures, continued consultations with land resource agencies, and our recommendations, we believe that impacts to land use, recreation and special interest, and visual resources would not be significant.

5.1.9 Socioeconomics

The proposed Project would have positive impacts on local spending, employment, and tax income during construction and operation; however, these impacts would be relatively minimal. Construction of the proposed Project would not have a significant adverse impact on local populations, housing, employment, community services, or local commerce. Any adverse impacts would be highly localized and temporary due to the relatively short construction period and the rapid rate at which construction crews would pass through any one area. Construction of the proposed Project would temporarily increase demand for public services, such as medical, police, and fire protection, but these impacts would be offset by increased tax revenues to local governments. There is no evidence that the proposed Project would have a disproportionate share of adverse environmental or socioeconomic impacts on any racial, ethnic, or socioeconomic group. Therefore, we conclude that the proposed Project would not have negative socioeconomic impacts.

5.1.10 Cultural Resources

Gulf South identified 43 cultural resource sites along the proposed Project route. Twelve sites are considered potentially eligible for listing on the NRHP. Gulf South has adopted route variations that avoid impacts to the cultural resource sites identified as potentially eligible for listing on the NRHP during the cultural resource surveys. In the event that sites eligible for listing in the NRHP are identified in future survey efforts and those sites cannot be avoided, Gulf South would continue to consult with the Commission staff and SHPO to develop appropriate treatment plans to avoid or mitigate any adverse effects to cultural resource sites. We are recommending that Gulf South defer construction until surveys

and evaluations of areas not previously accessed are completed, all survey reports and any necessary treatment plans have been reviewed by appropriate parties, and the Director of OEP provides written notification to proceed.

5.1.11 Air Quality and Noise

Air quality impacts associated with construction of the proposed Project would include emissions from fossil-fueled construction equipment and fugitive dust. However, such air quality impacts would generally be temporary and localized and are not expected to cause or contribute to a violation of applicable air quality standards. The proposed Delhi, Harrisville, and Destin Compressor Stations would emit air pollutants as a result of combustion of natural gas to drive the compressor units and in association with the periodic operation of auxiliary generators. However, the air emissions associated with operation of these facilities would meet federal and state ambient air quality standards and permitting requirements.

Impacts to noise quality associated with construction of the proposed Project would generally be temporary, minor, and limited to daylight hours, except at HDD sites where drilling and related construction equipment would likely operate on a continuous basis. At the HDD locations, impacts on NSAs are projected to be temporary and minor. The proposed compressor stations would also generate noise on a continuous basis during operations. However, the predicted noise levels attributable to operations of the new compressor stations would not result in significant effects on the NSAs nearest to those facilities. To ensure that noise levels are within acceptable limits, we are recommending that Gulf South file noise survey reports within 60 days after placing the compressor stations in service to confirm that noise levels would be below 55 dBA.

5.1.12 Reliability and Safety

The proposed Project would be designed, constructed, operated, and maintained to meet or exceed all DOT safety standards for natural gas pipelines. Following construction, Gulf South would also initiate a pipeline integrity management plan to ensure public safety during operation. The proposed Project would result in only a slight increase in risk to the nearby public.

5.1.13 Cumulative Impacts

Three types of projects—past, present, and reasonably foreseeable future projects—could potentially contribute to a cumulative impact when considered with the proposed Project. These projects include other natural gas transmission pipelines in the area and non-jurisdictional facilities associated with the proposed Project. We identified five interstate natural gas pipeline projects planned or proposed in Mississippi and/or Alabama that would potentially result in a cumulative impact when considered with the proposed Project. One of these has been constructed (Carthage to Perryville Project, CP06-85), one is under construction (East Texas to Mississippi Project, CP06-446), and two projects are currently filed at the Commission (Spectra Energy's Southeast Supply Header Project [CP07-44], and Boardwalk Pipeline's Gulf Crossing Project [CP07-398]). One additional project is being planned and is undergoing the Commission's Pre-filing, Kinder Morgan's MidContinent Express Project (PF07-004). Construction of the pending projects is projected to occur between the years 2007 and 2009. The potential impacts associated with these projects that are most likely to be cumulatively significant are related to wetlands and waterbodies, vegetation and wildlife (including federally and state-listed endangered and threatened species), land use, air quality, and noise. Cumulative impacts will be addressed during the review process for each of the pending projects.

Based on the proposed construction, minimization, mitigation, and operations procedures and measures, we believe that impacts associated with the proposed Project would be relatively minor.

Similarly, each of the projects considered in our analysis has been or would be designed to avoid or minimize impacts to sensitive environmental resources. We are including recommendations that Gulf South reduce the permanent right-of-way width, to evaluate whether it can use about 10 feet of other existing utility rights-of-way for spoil storage, and to justify the currently proposed size of ATWSs in order to minimize construction requirements. Additionally, it is anticipated that any significant unavoidable impacts to sensitive resources resulting from these projects would be mitigated. Mitigation generally leads to the avoidance or minimization of cumulative impacts. Any proposed projects under the Commission's jurisdiction would also be the subject of our NEPA review to avoid or minimize impacts. Consequently, only a small cumulative effect is anticipated when the impacts of the proposed Project are added to past, present, or reasonably foreseeable future projects in the area.

5.1.14 Alternatives

We evaluated the No Action or Postponed Action alternatives, system alternatives, major route alternatives, route variations, and aboveground facility site alternatives. While the No Action or Postponed Action alternative would eliminate the short- and long-term environmental impacts identified in this EIS, the objectives of the proposed Project would not be met, and Gulf South would not be able to provide a new source of natural gas to markets that can be accessed through the proposed pipeline interconnects.

Our analysis of system alternatives included an evaluation of whether existing and proposed natural gas pipeline systems would meet the proposed Project objectives while offering an environmental advantage over the proposed Project. Gulf South's existing system in the central Mississippi area is mostly low-pressure or medium-pressure pipeline and is mostly dedicated to a type of service that requires unpredictable contractual commitments. In addition, Gulf South has no available high-pressure take-away capacity from the central Mississippi area. Gulf South's high-pressure north-south Index 130 pipeline is operating at full capacity at its MAOP. Because of these existing pipeline capacity constraints, the use of Gulf South's existing facilities to make the level of deliveries currently requested by the market is not a viable alternative. New pipeline and compression, such as that proposed for the Southeast Expansion Project, would have to be constructed to alleviate the capacity constraints developing in the Perryville-Harrisville area and to provide additional outlets for new supplies. Our engineering staff evaluated this and other potential system alternatives to Gulf South's proposed expansion, including the proposed Southeast Supply Header and East Texas to Mississippi Expansion projects and the newly-constructed Carthage to Perryville Expansion Project. We found that no other interstate pipeline systems in the region could serve Gulf South's customers without having to construct additional facilities, which would result in environmental impacts similar in nature to those of the proposal, or could have greater impacts than Gulf South's proposal. Consequently, no system alternatives are considered to be environmentally preferable to the proposed Project.

We also evaluated one major route alternative to the proposed Project route. However, as described in the EIS, that alternative would not offer significant environmental advantages over the proposed Project route, and we eliminated it from further consideration.

The draft EIS included 11 minor route changes that were developed during the pre-filing process. Gulf South adopted 16 additional route changes following the issuance of the draft EIS. We have evaluated these route changes and considered their associated environmental consequences as part of our environmental analysis of the proposed Project. We concur with the use of all of these route changes, as they were developed to lessen environmental impacts to streams, residences, farms, and other sensitive environmental resources. No other route changes were identified.

We also evaluated the proposed locations of the Project aboveground facilities to determine whether environmental impacts would be reduced or mitigated by use of alternative facility sites. Because the locations of the aboveground facilities would be linked to the location of the pipeline, the search for alternatives was constrained to sites located adjacent to the proposed Project route. We approved an alternative site proposed by Gulf South for its Destin Compressor Station. There were no environmental concerns with any of the aboveground facility locations. Therefore, we did not identify any other alternative sites for the proposed compressor station or M/R or MLV facilities.

In summary, we have determined that Gulf South's proposed project, as modified by our recommended mitigation measures, is the preferred alternative.

5.2 STAFF'S RECOMMENDEDATIONS

If the Commission issues a Certificate for the proposed Project, we recommend that the Commission's Order include the following specific conditions. We believe that these measures would further minimize and mitigate the environmental impacts associated with the construction and operation of the proposed Project.

1. Gulf South shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff information requests), and as identified in the EIS, unless modified by the Order. Gulf South must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;

    b. justify each modification relative to site-specific conditions;

    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and

    d. receive approval in writing from the Director of OEP **before using that modification**.

2. The Director of OEP has delegated authority to take all steps necessary to ensure the protection of life, health, property, and the environment during construction and operation of the Project. This authority shall include:

    a. the modification of conditions of the Commission's Order; and

    b. the design and implementation of any additional measures deemed necessary (including stop work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from Project construction and operation.

3. **Prior to any construction**, Gulf South shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EIs authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities.

4. The authorized facility location(s) shall be as shown in the EIS, as supplemented by filed alignment sheets, and shall include all of the staff's recommended facility locations. **As soon as they are available, and prior to the start of construction**, Gulf South shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental

conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Gulf South's exercise of eminent domain authority granted under NGA Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Gulf South's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Gulf South shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type and documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally-sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **prior to construction** in or near that area.

   This requirement does not apply to route variations required herein or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas, such as wetlands.

   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;
   b. implementation of endangered, threatened, or special concern species mitigation measures;
   c. recommendations by state regulatory authorities; and
   d. agreements with individual landowners that affect other landowners or would affect sensitive environmental areas.

6. **Within 60 days of the acceptance of this certificate and prior to construction**, Gulf South shall file an initial Implementation Plan with the Secretary for review and written approval by the Director of OEP describing how Gulf South will implement the mitigation measures required by the Order. Gulf South must file revisions to the plan as schedules change. The plan shall identify:

   a. how Gulf South will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to on-site construction and inspection personnel;
   b. the number of EIs assigned per spread and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
   c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
   d. the training and instructions Gulf South will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel changes), with the opportunity for OEP staff to participate in the training session;

e. the company personnel (if known) and specific portion of Gulf South's organization having responsibility for compliance;

f. the procedures (including use of contract penalties) Gulf South will follow if non-compliance occurs; and

g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

(1) the completion of all required surveys and reports;

(2) the mitigation training of on-site personnel;

(3) the start of construction; and

(4) the start and completion of restoration.

7. Gulf South shall employ one or more EIs per construction spread. The environmental inspectors shall be:

a. responsible for monitoring and ensuring compliance with all mitigative measures required by the Order and other grants, permits, certificates, or other authorizing documents;

b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract and any other authorizing document;

c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

d. a full-time position, separate from all other activity inspectors;

e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

f. responsible for maintaining status reports.

8. Gulf South shall file updated status reports with the Secretary on a **weekly basis until all construction-related activities, including restoration, are complete for each phase of the Project**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. the current construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;

b. a listing of all problems encountered and each instance of non-compliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);

c. a description of corrective actions implemented in response to all instances of non-compliance, and their cost;

d. the effectiveness of all corrective actions implemented;

e. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and

f. copies of any correspondence received by Gulf South from other federal, state, or local permitting agencies concerning instances of non-compliance, and Gulf South's response.

9. Gulf South must receive written authorization from the Director of OEP **before commencing service from** the Project. Such authorization will only be granted following a determination that rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.

10. **Within 30 days of placing the certificated facilities in service**, Gulf South shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; and

    b. identifying which of the certificate conditions Gulf South has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for non-compliance.

11. Gulf South shall develop and implement an environmental complaint resolution procedure. The procedure shall provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the Project and restoration of the right-of-way. **Prior to construction**, Gulf South shall mail the complaint procedures to each landowner whose property would be crossed by the Project.

    a. In its letter to affected landowners, Gulf South shall:

        (1) provide a local contact that the landowners should call first with their concerns; the letter should indicate how soon a landowner should expect a response;

        (2) instruct the landowners that if they are not satisfied with the response, they should call Gulf South's Hotline; the letter should indicate how soon to expect a response; and

        (3) instruct the landowners that if they are still not satisfied with the response from Gulf South's Hotline, they should contact the Commission's Enforcement Hotline at (888) 889-8030, or at hotline@ferc.gov.

    b. In addition, Gulf South shall include in its weekly status a table that contains the following information for each problem/concern:

        (1) the date of the call;

        (2) the identification number from the certificated alignment sheets of the affected property and approximate location by MP;

        (3) the description of the problem/concern; and

        (4) an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.

12. Gulf South shall not exercise eminent domain authority granted under Section 7(h) of the NGA to acquire a permanent right-of-way greater than 50 feet in width. ***(Section 2.2.1)***

13. **Prior to construction**, Gulf South shall file with the Secretary for review and written approval by the Director of OEP:

    a. revised alignment sheets and cross-section diagrams showing the use of at least 10 feet of Transco's and Crosstex's maintained permanent right-of-way for at least spoil storage, as part of its 100-foot-wide construction right-of-way; and

b. site-specific justification by milepost for areas where Gulf South believes use of the existing maintained permanent right-of-way to be infeasible for spoil storage. ***(Section 2.2.1)***

14. Gulf South shall conduct, with the well-owner's permission, pre- and post-construction well monitoring of well yield and water quality for wells identified in Table 3.3.1.1-1. **Prior to construction**, Gulf South shall file with the Secretary, for review and written approval by the Director of OEP, a well monitoring and mitigation plan that describes standard testing procedures, and the measures that would be taken should a well be impacted such that it is no longer operable or that it becomes impaired. Gulf South shall offer this plan to the landowners before construction. Gulf South shall also file a report with the Secretary, **within 30 days of placing its pipeline facilities in service**, identifying all private or domestic water wells or systems damaged by construction and describing how they were repaired. The report shall include a discussion of any complaints concerning well yield or quality and how each problem was resolved. ***(Section 3.3.1.2)***

15. **Prior to construction,** Gulf South shall file along with its site-specific construction plans for the Delhi, Harrisville, and Destin Compressor Stations a description of the measures that it would take to avoid impacts to waterbodies affected by these facilities. ***(Section 3.3.2.1)***

16. **Prior to construction,** Gulf South shall complete consultation with the NPS regarding its proposed HDD crossings of, and hydrostatic test water withdrawals from, the NRI-listed Strong and Chickasawhay Rivers, and file copies of those consultations with the Secretary. If applicable, Gulf South shall also file plans to address any additional mitigation measures recommended by the NPS. ***(Section 3.3.2.1)***

17. **Prior to construction,** Gulf South shall file with the Secretary copies of approvals or concurrences from the ADCNR indicating that in-stream construction between December 1 and May 31 is acceptable. ***(Section 3.3.2.2)***

18. Gulf South shall prevent sediment and heavily silt-laden water from entering ponds adjacent to areas disturbed by construction activities. Gulf South shall conduct the open-cut crossing of the waterbodies feeding these ponds (at the following mileposts: 6.8, 12.5, 15.0, 25.0, 40.9, 41.6, 51.2, 53.4, 59.5, 60.0, 63.5, 65.1, 75.1, 77.1, 86.9, 87.1, 98.6, and 110.0) in a manner that prevents sediment and heavily silt-laden water from entering the ponds. ***(Section 3.3.2.2)***

19. Gulf South shall not begin an open-cut crossing of any of the waterbodies proposed to be crossed using HDD until it files an amended crossing plan with the Secretary for review and written approval by the Director of OEP. The amended crossing plan shall include site-specific drawings identifying all areas that would be disturbed using the proposed alternate crossing method. Gulf South shall file the amended crossing plan concurrent with the appropriate state and federal applications required for implementation of the plan. ***(Section 3.3.2.3)***

20. **Prior to construction**, Gulf South shall consult further with the MDWFP, the LDWF, the ADCNR, the NRCS, and other appropriate agencies, regarding seeding and vegetation restoration practices for the proposed Project. Gulf South shall file a report with the Secretary for review and written approval by the Director of OEP that describes the outcome of these consultations and identifies the agency-recommended seeding and vegetation restoration practices that Gulf South plans to implement. ***(Section 3.5.2)***

21. **Prior to construction,** Gulf South shall file with the Secretary, for review and written approval by the Director of OEP, an Exotic and Invasive Species Control Plan developed in consultation with the FWS, the LDWF, the MDWFP, the ADCNR, and the NRCS. This plan shall identify the specific

measures that Gulf South would implement during construction and operation to control exotic and invasive plant species. ***(Section 3.5.4)***

22. **Prior to construction,** Gulf South shall file a revised Conservation Strategy for the Gopher Tortoise and Eastern Indigo Snake that incorporates all non-discretionary terms and conditions of the FWS's BO for this Project, as well as conservation recommendations 1 and 2. ***(Section 3.7.1)***

23. Gulf South shall not begin construction activities on modified work areas **until**:

    a. the staff completes Section 7 consultations with the FWS; and

    b. Gulf South has received written notification from the Director of OEP that construction or use of mitigation may begin. ***(Section 3.7.1)***

24. Gulf South shall continue to consult with the LDWF, the MDWFP, and the ADCNR to determine the need for surveys or mitigation that would substantially minimize or avoid potential impacts to state-listed species. Gulf South shall file copies of the results of these consultations, as well as any associated survey reports and mitigation plans with the Secretary, **prior to construction.** ***(Section 3.7.2)***

25. **Prior to construction**, Gulf South shall consult with the Delhi Municipal Airport officials and the FAA regarding impacts of the proposed Project, specifically the proposed Delhi Compressor Station, on airport operations, and file a site-specific construction plan that addresses any concerns identified by those authorities with the Secretary. ***(Section 3.8.4)***

26. **Prior to construction**, Gulf South shall consult with the Thigpen Field Airport officials and the FAA regarding impacts of the proposed Project on airport operations, and file a site-specific construction plan that addresses any concerns identified by those authorities with the Secretary. ***(Section 3.8.4)***

27. Gulf South shall consult with the FSA to determine appropriate seed mixes and/or revegetation efforts that should be implemented on CRP lands to minimize and mitigate construction and operations impacts. Gulf South shall also retain and have available for inspection any records of consultation(s) with the FSA indicating specific measures agreed upon by Gulf South and the FSA that would be implemented on CRP lands. ***(Section 3.8.4)***

28. **Prior to construction,** Gulf South shall file with the Secretary for review and written approval by the Director of OEP a visual screening plan to reduce the long-term adverse effects on the visual quality of residences located along Highway 17 that would result from installation of the Delhi Compressor Station. ***(Section 3.8.6.1)***

29. Gulf South shall **defer** implementation of any treatment plans/measures (including archaeological data recovery), construction of facilities, and use of all staging, storage, or temporary work areas and new or to-be-improved access roads **until**:

    a. Gulf South files with the Secretary cultural resources survey and evaluation reports, any necessary treatment plans, and the Mississippi and Alabama SHPO comments on the reports and plans; and

    b. The Director of OEP reviews and approves all cultural resources survey reports and plans and notifies Gulf South in writing that treatment plans/procedures may be implemented and/or construction may proceed.

All material filed with the Secretary containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE**." (***Section 3.10.4***)

30. Gulf South shall file noise surveys with the Secretary **no later than 60 days** after placing each of the Delhi, Harrisville, and Destin Compressor Stations in service. If the noise attributable to operation of all of the equipment at any compressor station at full load exceeds an L_{dn} of 55 dBA at any nearby NSA, Gulf South shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within one year of the in-service date**. Gulf South shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. ***(Section 3.11.3)***

APPENDIX A

DISTRIBUTION LIST

APPENDIX A
Distribution List

Federal Government Agencies

Advisory Council on Historic Preservation
- Director of Cultural Resources

Army Corps of Engineers (COE)
- Mike Miller, Vicksburg District
- Elizabeth Guynes, Vicksburg District
- Mike Stewart, Vicksburg District
- Tunis McElwain, Mobile District
- Damon M. Young, Mobile District
- Rudolph C. Villarreal, Mobile District
- Regulatory Division
- Office of the Chief of Army Engineers

Department of Agriculture (USDA)
- Office of Finance and Management
- Farm Service Agency (FSA)
- Natural Resources Conservation Service (NRCS)
  - National Environmental Coordinator
  - Larry Phillips, Richland Parish, LA, District Conservationist
  - Tim Poole, Choctaw County, AL, District Conservationist
  - Kelvin Jackson, District Conservationist
  - Harriet Lowe, District Conservationist
  - Malcolm Lowe, District Conservationist
  - Ronald Read, District Conservationist
  - Mason Dollar, Choctaw County, AL
  - Al Garner
  - Yancy Magee
  - Matthew R. Judy
- U.S. Forest Service
  - Deputy Chief, National Forest System
  - Director of Lands
  - Ecosystem Management Coordinator

Department of Commerce
- Office of the Secretary
  - Sloan Rappoport, Senior Policy Advisor
- National Oceanic and Atmospheric Administration
  - Director of Ecology and Conservation
- National Marine Fisheries Service
  - Karen Abrams, National EFH Coordinator

Department of Defense
- Office of Under Secretary of Defense

APPENDIX A
Distribution List

Federal Government Agencies (continued)

Philip Grone
Sonny White

U.S. Air Force
Office of Deputy Secretary Environment, Safety, and Occupational Health
Air Force Real Property Agency
Vincent Leduc
U.S. Army
Installation Management Agency
Paul Mason
Office of the Assistant Secretary of the Army (Civil Works)
Chip Smith
U.S. Navy
Office of the Assistant Secretary of the Navy
Robert Uhrich

Department of Energy
Robert Corbin, Manager Natural Gas Regulatory Activities
Harvey Harmon, Director for Import/Export Activities
Office of Environmental Compliance
Office of Intergovernmental Affairs
Steve Lerner

Department of Health and Human Services
Centers for Disease Control (CDC)

Department of Homeland Security
United States Coast Guard
Admiral Thomas H. Collins, Commandant
Office of Operating and Environmental Standards
Captain David Scott

Department of Housing and Urban Development
Director of Environment

Department of Interior
Director of the Office of Environmental Policy and Compliance
Patricia E. Morrison, Principal Deputy Assistant Secretary for Land & Minerals Management
Minerals Management Service
Walter Cruickshank, Deputy Director
National Park Service
Natchez Trace Parkway

APPENDIX A
Distribution List

Federal Government Agencies (continued)

D. Craig Stubblefield
Kurt Foote
River, Trails, & Conservation Assistance Program
Jeff Duncan

U.S. Fish and Wildlife Service
Daphne Ecological Services Field Office, Alabama
Bruce Porter
Elaine Snyder-Conn
Jackson Ecological Services Field Office, Mississippi
Kathy Lunceford
Ray Aycock
David Felder
Daniel Gregg
Lafayette Ecological Services Field Office, Louisiana
Brigette Firmin
Atlanta Field Office, Georgia

Department of Justice
Land and Natural Resources Division

Department of Labor
Office of Regulatory Economics

Department of State
Office of Environment/Health

Department of Transportation
Camille Mittelholtz, Environmental Policies Team Leader
Office of Pipeline Safety
Research and Special Program Administrator
Karen Butler
Alex Dankanich
Linda Daugherty, Southern Region
Kimbra Davis, Community Assistance/Technical Services
Tom Fortner
Stacy Gerard, Acting Assistant Administrator
William Gute, Eastern Region
Mike Schwarzkof
Rodrick M. Seeley, Southwestern Region
Harold Winnie
Pipeline and Hazardous Materials Safety Administration
Kimberly Hughes, Executive Secretary

APPENDIX A
Distribution List

Federal Government Agencies (continued)

Environmental Protection Agency
Office of Federal Activities
Region 4
Chris Hoberg
J. I. Palmer, Jr. Administrator
Region 6
Mike Jansky

Executive Office of the President
Council on Environmental Quality
Dinah Bear, General Council
Horst Greczmiel, Associate Director for NEPA Oversight

Federal Energy Regulatory Commission
Office of Energy Projects
Juan Polit, Project Manager

Interstate Commerce Commission
Chief Energy & Environment

Library of Congress
Exchange & Gift Division
Federal Documents Section

U.S. Senate
Committee on Energy and Natural Gas

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation

Federal Representatives and Senators

Alabama
The Honorable Terry Everett - United States House of Representatives
The Honorable Jo Bonner - United States House of Representatives
The Honorable Mike Rogers - United States House of Representatives
The Honorable Robert B. Aderholt - United States House of Representatives
The Honorable Robert E. (Bud) Cramer, Jr. - United States House of Representatives
The Honorable Spencer Bachus - United States House of Representatives
The Honorable Artur Davis - United States House of Representatives
The Honorable Richard C. Shelby - United States Senate
The Honorable Jeff Sessions - United States Senate

APPENDIX A
Distribution List

Federal Representatives and Senators (continued)

Mississippi

The Honorable Roger F. Wicker - United States House of Representatives
The Honorable Bennie G. Thompson - United States House of Representatives
The Honorable Charles W. (Chip) Pickering - United States House of Representatives
The Honorable Gene Taylor - United States House of Representatives
The Honorable Thad Cochran - United States Senate
The Honorable Trent Lott - United States Senate

Louisiana

The Honorable Rodney Alexander - United States House of Representatives
The Honorable Senator Mary Landrieu - United States Senate
The Honorable Senator David Vitter - United States Senate

State Representatives and Senators

Alabama
Rep. Artis McCampbell, District 71
Rep. Bobby Singleton, District 24
Senator Pat Lindsey, District 22

Mississippi
Rep. Blaine Eaton, District 79
Rep. Joey Hudson, District 91
Rep. Sherra Lane, District 86
Rep. John Moore, District 60
Rep. Eric Robinson, District 84
Rep. Clint Rotenberry, District 77
Rep. Omeria Scott, District 80
Rep. Greg Snowden, District 83
Rep. Johnny Stringer, District 87
Rep. J. L. Warren, District 90
Rep. Tom Weathersby, District 62
Rep. Steve Horne, District 81
Senator Videt Carmichael, District 33
Senator Cindy Hyde-Smith, District 39
Senator Perry Lee, District 35
Senator Billy Thames, District 34

Louisiana
Representative Francis Thompson, District 19
Senator Charles Jones, District 34
Senator Noble Ellington, District 32

APPENDIX A
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State Government Agencies

Alabama

Governor Bob Riley - State Capitol
Alabama Wildlife and Freshwater Fisheries Division
M. N. "Corky" Pugh, Director
Mark Sasser, Coordinator Non-game Wildlife Program
Alabama Department of Environmental Management
Allen Phelps
Scott Brown
Water Division
Lynn Sisk, Chief
Alabama Dept. of Natural Resources - State Lands Division
James H. Griggs
Alabama Department of Archives and History
Dr. Edwin C. Bridges
Alabama Department of Conservation and Natural Resources
James Cherry
Penny Ragland
Chuck Sharp
Alabama Historical Commission
Colonel (Ret.) John A Neubauer
Stacye Hathorne
Alabama Natural Heritage Program
Michael Barbour

Louisiana

Governor Kathleen Blanco – State Capitol
Louisiana Department of Wildlife and Fisheries
Gary Lester, Natural Heritage
Kyle Balkum
Louisiana Department of Culture, Recreation, and Tourism
Phillip "Duke" Rivet

Mississippi

Governor Haley Barbour – State Capitol
Mississippi Department of Environmental Quality
Jim Morris
Maya Rao
Mississippi Department of Wildlife, Fisheries, and Parks
Brad Young
Dennis Riecke
Mississippi Natural Heritage Program
Matt Hicks

APPENDIX A
Distribution List

State Government Agencies (continued)

Mississippi Department of Archives and History
Tom Waggener
Mississippi Secretary of State
Eric Clarke
William Cheney

Local Government Agencies

Mississippi
Clarke County Schools - Quitman, MS
Jasper County - Heidelberg, MS
Jasper County Dists. 2, 4, and Jasper County Court - Bay Springs, MS
Town of Heidelberg - Heidelberg, MS
Town of Bay Springs - Bay Springs, MS
Simpson County
Curtis Skiffer, Supervisor
Jasper County
Curtis Gray, Supervisor
Smith County
Wilson Hallman, Supervisor
Clarke County
Arthur Nelson, Supervisor

Alabama
Choctaw County
Michael Armistead, Supervisor

Libraries

Alabama
Choctaw County Public Library

Mississippi
Bay Springs Public Library
Floyd J. Robinson Memorial Library
Mary Weems Parker Memorial Library
Mendenhall Public Library
Cindy Rankin
Quitman Public Library

APPENDIX A
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Media

Alabama
Choctaw Advocate
Tommy Campbell

Louisiana
The Delhi Dispatch
Mary Terry

Mississippi
Hattiesburg American Newspaper
Jackson Clarion-Ledger
Jasper County Beat 5
Laurel Leader-Call
Meridian Star
Simpson County News
The Vicksburg Post

Native American Tribes

Alabama Coushatta Tribe of Texas
Debbie Thomas
Caddo Nation
Robert Cast
Cher-O-Creek Intra Tribal Indians
State Recognized Tribe
Cherokee Tribe of Northeast Alabama
State Recognized Tribe
Coushatta Tribe of Louisiana
Loveline Poncho
Echota Cherokee Tribe of Alabama
State Recognized Tribe
Jena Band of Choctaw Indians
Christine Norris
Ma-Chis Lower Creek Indian Tribe
State Recognized Tribe
Mississippi Band of Choctaw Indians
Kenneth Carleton
Choctaw Branch
Mowa Band of Choctaw Indians
State Recognized Tribe
Piqua Shawnee Tribe
State Recognized Tribe

APPENDIX A
Distribution List

Native American Tribes (continued)

Poarch Band of Creek Indians
Federal and State Recognized Tribe
Star Clan of Muscogee Creeks
State Recognized Tribe
Tunica-Biloxi Indian Tribe
Earl J. Barbry, Jr.
United Cherokee Ani-Yun-Wiya Nation
State Recognized Tribe

Intervenors

United Municipal Distributors Group
Members Include:
Gulf South Pipeline Company, LP
Utilities Board of the City of Atmore, Alabama
City of Brewton, Alabama
Town of Century, Florida
Utilities Board of the Town of Citronelle, Alabama
City of Fairhope, Alabama
Utilities Board of the City of Foley, Alabama
North Baldwin Utilities, Alabama
Okaloosa Gas District, Florida
City of Pascagoula, Mississippi
City of Pensacola, Florida
South Alabama Gas District, Alabama
James H. Byrd
Miller, Balis & O'Neil, P.C.

Southern Company Services, Inc.
Agent for Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company, and Southern Power Company (collectively, "SCS")
Roy. R. Robertson, Jr.

CenterPoint Energy Entex ("Entex")
Kent Armstrong, Manager

Atmos Energy Corporation ("Atmos")
Mark Bergeron
Kenny Malter

Florida Power & Light Company ("FPL")
William G. Walker III

APPENDIX A
Distribution List

Intervenors (continued)

Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. (CP&L)
Richard Rhodes

Florida Power Corporation d/b/a Progress Energy Florida, Inc. (Florida Power)
Richard Rhodes

Southern Natural Gas Company
John C. Griffin

Mobile Gas Service Corporation ("Mobile Gas")
Mr. G. Edgar Downing, Jr.

Willmut Gas Company ("Willmut")
Mr. Karl H. Ficken, President

Mayor and Aldermen of the City of Vicksburg, Mississippi ("Vicksburg")
Mr. Timothy M. Smith

Organizations and Individuals

PBS&J
Kari Sutton
Heather Dusek
Mike Letson
Nancy Porter
Joanna Silosky

Louisiana
Allen R. Best
Austin Simms
Bob Dwain Mikell
Bobby Hugh Hale and Bettie Johnson Hale
CenterPoint Energy Gas Transmission Co.
Charles A. Black
Columbia Gulf Transmission Co.
Dawson Farms, LLC
Delhi City Property
Ellis Herring, et. al.
Gary Lane Cater and Angie Cater
Jacqueline J. Howard, et al
James Brantly
Jeanetter Allen Bullock
Providence Memorial Park Corp.

APPENDIX A
Distribution List

Organizations and Individuals (continued)

Ricky and Patricia Rudd
Steve Britton
T.A. Redd
Waverly Land & Timber

Mississippi

Adirondack Timber, LLC
    Charles Vanover
Alexander Plantation
Anderson Tully Company
American Gas Association
    Dave Parker
Barry Satcher Estate, Mariah Development, Inc.
Chantilly Corp.
    W. M. Deavours
Chickasawhay Farms, LLC
Cook Timber Company
Denbury Onshore, LLC
Denbury Resources
Destin Pipeline Co., LLC
First Presbyterian Church
    Earl Davis
Gulf South Pipeline Company
    Andrew Chartrand
    Kyle Stephens
    Ted Ryther
    James N. Sheppard
Hallforest L.P.
Halltree, Inc.
International Paper
Johnston's Sand & Gravel, Inc.
K & T Poultry Sales and Services
K.T. Farms, Inc.
Lace Dase Est.
Mame, LP
Mississippi Audubon Society
    Bruce Reid
Mississippi Wildlife Federation
    Dr. Cathy Shropshire
Pipe Line Contractors Association
    J. Patrick Tielborg
Plum Creek Timberlands

APPENDIX A
Distribution List

Organizations and Individuals (continued)

Plummer Heidelberg Est.
Quitman Timber, LLC
Roaring Creek, LP – Lillous Faye Shoemaker
Rocky Mountain P/L Construction Association
J. D. Lormand
Simpson County School District
Sierra Club, Mississippi Chapter
Rose Johnson
South Miss. Elec. Power Company
Transcontinental Gas Pipe Line Corp., Tulsa
Transcontinenal Gas Pipeline Corp., Houston
Transcontinenal Gas Pipeline Corp.
Chuck Pittman
Steve M. Cole
David Whiteside
Weyerhaeuser Company
The Wilderness Society
Pete Morton
Esther Richardson
Carolyn Dear
Jeff A. Arrington and Sandra K. Arrington
Mason Newell
Bobby Mills
C.V. Herrington, Jr.
Martin C. Harwell, Sr.
Billy Terry Ashley
James Price Wallace
Billy Jim Thompson
David and Elizabeth Livingston
Chauncey Tanner
James Scott and Clair B. Scott
Owen Wilson Garrett
Greg Fleming
W. C. Anderson
Carol F. Knouse
William S. and Virginia W. Scott
Albert E. Rowell
John Palmer
Toby Sims
Hal T. McMullan
James C. Sims
Bertha J. and Will R. Collins, Jr.
Ruth McCardy Estate c/o Robbie Kashona

APPENDIX A
Distribution List

Organizations and Individuals (continued)

Ben Cooper Est.
Jessie Allen
Albert and Alfred Evans
Tommie S. Collins
Anita Fay Jones
Dorothy Allen
Sarah Ann Brannan
Jason Busby
Juliette Clayton
George H. Childer
Billy Jean Gregory
Charlotte McCoy
Ronald M. Griffin
Johnny Morgan
Alice M. Rankin
Parry and Ada B. Roundtree
G. C. Hankins
Charles E. Seal, Sr.
Douglas H. Veazey
Charles B. Brashier III
Stone Windham
Howard R. and Ione Sims
Thurston McCarty
Alford Doba
Annie Mae Turner
Harry Lee Haney
Ann Shoemaker
Mark Magee
Warner Mitchell
J. Curtis Moffatt
Rickey Fournoy

Alabama

Alabama Environmental Council
    Jayme Hill
Alabama Wildlife Federation
    Tim Gothard
Caraland, LLC
Cuba Timber
Jodane Partnership, Ltd.
L.A. Timberlands, LLC
Land Properties, Ltd.
    Virginia Sikes

APPENDIX A
Distribution List

Organizations and Individuals (continued)

Willoise W. Estes
Sierra Club, Alabama Chapter
Paul Perret
South Alabama Land & Timber Co.
Willie and Sue Hearn, Et ux.
Sara Life

APPENDIX B

FACILITY LOCATION MAPS

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Non-Internet Public

ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED SOUTHEAST EXPANSIONPROJECT
Docket No. CP07-032-000

Figure B-1
Sheets 1-40
Appendix B
Facility Location Maps

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Non-Internet Public

ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED SOUTHEAST EXPANSIONPROJECT
Docket No. CP07-032-000

Figure B-2
Sheets 1-3
Appendix B
Pipe Storage and Contractor Yards

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APPENDIX C

SOILS

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Arundel-Cantuche complex, 25 to 60 percent slopes, stony	0.31	No	Severe	Yes	No	Fair	Well drained	No
Bibb and Chastain fine sandy loams (bibb and una)	2.25	No	Severe	Yes	No	Good	Poorly drained	No
Bibb fine sandy loam, frequently flooded	1.59	No	Severe	Yes	No	Fair	Poorly drained	No
Bibb soils	0.34	Yes	Severe	Yes	No	Good	Poorly drained	No
Bibb-Iuka complex, 0 to 1 percent slopes, frequently flooded	0.11	No	Severe	Yes	No	Good	Poorly drained	No
Boswell fine sandy loam, 2 to 5 percent slopes	0.36	Yes	Moderate	No	No	Good	Moderately well drained	No
Boswell fine sandy loam, 5 to 8 percent slopes	1.35	Yes	Moderate	Yes	No	Good	Moderately well drained	No
Boswell fine sandy loam, 8 to 12 percent slopes, eroded (sweatman)	0.62	No	Severe	Yes	No	Fair	Well drained	No
Boswell, Shubuta, and Cuthbert fine sandy loams, 12 to 45 percent slopes (sweatman)	2.50	No	Severe	Yes	No	Fair	Well drained	No
Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes, eroded	3.74	No	Severe	Yes	No	Fair	Well drained	No
Cahaba fine sandy loam, 0 to 2 percent slopes	0.29	Yes	Low	Yes	No	Good	Well drained	No
Cahaba fine sandy loam, 2 to 5 percent slopes	0.07	Yes	Low	No	No	Good	Well drained	No
Eustis loamy sand, 12 to 35 percent slopes	1.59	No	Severe	Yes	No	Fair	Somewhat excessively drained	No
Eustis loamy sand, 5 to 8 percent slopes	0.48	Yes	Moderate	Yes	No	Fair	Somewhat excessively drained	No
Eustis loamy sand, 8 to 12 percent slopes	0.42	No	Severe	Yes	No	Fair	Somewhat excessively drained	No
Eustis loamy sand, terrace	0.541	Yes	Moderate	Yes	No	Good	Somewhat excessively drained	No
Eutaw-Vaiden clays, deep (louin)	1.63	No	Moderate	Yes	No	Good	Somewhat excessively drained	No

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Flint fine sandy loam, loamy substratum, 0 to 2 percent slopes (annemaine)	0.03	Yes	Low	Yes	No	Good	Moderately well drained	No
Freest loam, 2 to 5 percent slopes, eroded	0.23	Yes	Severe	No	No	Good	Moderately well drained	No
Freest loam, 5 to 8 percent slopes, eroded	0.06	Yes	Low	No	No	Good	Moderately well drained	No
Heidel sandy loam, 12 to 30 percent slopes	0.37	No	Severe	Yes	No	Fair	Well drained	No
Heidel sandy loam, 15 to 35 percent slopes	1.21	No	Severe	Yes	No	Fair	Well drained	No
Heidel sandy loam, 8 to 15 percent slopes	0.59	No	Moderate	Yes	No	Fair	Well drained	No
Heidel-Troup association, hilly	2.84	No	Severe	Yes	No	Fair	Well drained	No
Houlka clay	0.10	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Iuka fine sandy loam (ochlockonee)	0.09	Yes	Low	Yes	No	Fair	Well drained	No
Izagora fine sandy loam, 0 to 2 percent slopes, rarely flooded	0.18	Yes	Low	Yes	No	Fair	Moderately well drained	No
Jena fine sandy loam, occasionally flooded	1.64	Yes	Low	Yes	No	Good	Well drained	No
Johnston loam	0.08	No	Severe	Yes	No	Good	Very poorly drained	No
Kirkville fine sandy loam, occasionally flooded	1.51	Yes	Low	Yes	No	Good	Moderately well drained	No
Kirkville-Jena association, frequently flooded	1.17	No	Severe	Yes	No	Fair	Moderately well drained	No
Kirkville-Mantachie complex	3.40	No	Low	Yes	No	Good	Moderately well drained	No
Lakeland sand, 5 to 12 percent slopes	0.05	No	Severe	Yes	No	Fair	Well drained	No
Lakeland sand, 12 to 30 percent slopes	0.04	No	Severe	Yes	No	Fair	Well drained	No
Lauderdale-Arundel complex, 2 to 10 percent slopes, stony, eroded	0.05	No	Moderate	No	No	Fair	Well drained	No
Leaf fine sandy loam	0.23	No	Moderate	Yes	No	Fair	Poorly drained	No

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Luverne sandy loam, 1 to 5 percent slopes	0.08	Yes	Moderate	No	No	Good	Well drained	No
Mantachie loam, occasionally flooded	0.30	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Mantachie soils, local alluvium	0.68	Yes	Low	Yes	No	Good	Moderately well drained	No
Mantachie, Bibb, and Iuka soils (kirkville, kinston, iuka)	2.08	No	Severe	Yes	No	Good	Moderately well drained	No
Mantachie-Mathiston association, frequently flooded	0.77	No	Severe	Yes	No	Good	Somewhat poorly drained	No
Mashulaville fine sandy loam, terrace	0.21	Yes	Moderate	Yes	No	Good	Poorly drained	No
McCrory-Deerford complex, 0 to 2 percent slopes, occasionally flooded	0.05	No	Moderate	Yes	No	Fair	Poorly drained	No
McLaurin loamy sand, 2 to 5 percent slopes	0.71	Yes	Low	No	No	Good	Well drained	No
McLaurin loamy sand, 5 to 8 percent slopes	0.56	Yes	Moderate	Yes	No	Good	Well drained	No
Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded	0.25	No	Severe	Yes	No	Good	well drained	No
Ora fine sandy loam, 2 to 5 percent slopes	1.39	Yes	Low	No	No	Fair	Moderately well drained	No
Ora fine sandy loam, 5 to 8 percent slopes	1.11	Yes	Moderate	Yes	No	Fair	Moderately well drained	No
Ora fine sandy loam, 8 to 12 percent slopes, eroded	0.61	No	Moderate	Yes	No	Fair	Moderately well drained	No
Ora loam, 2 to 5 percent slopes, eroded	0.21	Yes	Low	Yes	No	Fair	Moderately well drained	No
Ora loam, 5 to 8 percent slopes, eroded	0.31	Yes	Moderate	No	No	Fair	Moderately well drained	No
Orangeburg fine sandy loam, 12 to 17 percent slopes (smithdale)	0.09	No	Severe	Yes	No	Fair	Well drained	No
Orangeburg fine sandy loam, 17 to 35 percent slopes (smithdale)	0.23	No	Severe	Yes	No	Fair	Well drained	No

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Petal and Smithdale soils, 15 to 35 percent slopes	2.44	No	Severe	Yes	No	Fair	Moderately well drained	No
Petal and Smithdale soils, 8 to 15 percent slopes	4.09	No	Moderate	Yes	No	Fair	Moderately well drained	No
Pheba fine sandy loam, 0 to 2 percent slopes (stough)	0.17	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Prentiss fine sandy loam, 0 to 2 percent slopes	1.29	Yes	Low	Yes	No	Good	Moderately well drained	No
Prentiss fine sandy loam, 2 to 5 percent slopes	0.58	Yes	Low	No	No	Good	Moderately well drained	No
Providence silt loam, 2 to 5 percent slopes, eroded	0.04	Yes	Low	No	No	Good	Moderately well drained	No
Providence silt loam, 5 to 8 percent slopes, eroded	0.60	Yes	Moderate	Yes	No	Good	Moderately well drained	No
Quitman fine sandy loam, 0 to 2 percent slopes, occasionally flooded	0.41	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Quitman loam, 0 to 2 percent slopes	1.42	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Quitman-Jena-Trebloc association, flooded	2.77	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Ruston fine sandy loam, 12 to 17 percent slopes (smithdale)	0.48	No	Severe	Yes	No	Fair	Well drained	No
Ruston fine sandy loam, 17 to 35 percent slopes (smithdale)	0.66	No	Severe	Yes	No	Fair	Well drained	No
Ruston fine sandy loam, 2 to 5 percent slopes	2.49	Yes	Moderate	No	No	Good	Well drained	No
Ruston fine sandy loam, 5 to 8 percent slopes	3.56	Yes	Moderate	Yes	No	Good	Well drained	No
Ruston fine sandy loam, 8 to 12 percent slopes (smithdale)	1.08	Yes	Moderate	Yes	No	Fair	Well drained	No
Savannah fine sandy loam, 0 to 2 percent slopes	0.30	Yes	Low	Yes	No	Fair	Moderately well drained	No

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Savannah fine sandy loam, 2 to 5 percent slopes	3.13	Yes	Low	No	No	Fair	Moderately well drained	No
Savannah fine sandy loam, 5 to 8 percent slopes	0.84	Yes	Moderate	Yes	No	Fair	Moderately well drained	No
Savannah loam, 2 to 5 percent slopes, eroded	1.51	Yes	Low	No	No	Fair	Moderately well drained	No
Savannah loam, 5 to 8 percent slopes, eroded	1.92	Yes	Moderate	Yes	No	Fair	Moderately well drained	No
Savannah silt loam, 2 to 5 percent slopes	0.12	Yes	Low	No	No	Fair	Well drained	No
Shubuta fine sandy loam, 2 to 5 percent slopes	0.24	Yes	Low	No	No	Good	Well drained	No
Shubuta fine sandy loam, 5 to 8 percent slopes	2.67	Yes	Moderate	Yes	No	Good	Well drained	No
Shubuta fine sandy loam, 8 to 12 percent slopes	0.69	Yes	Moderate	Yes	No	Fair	Well drained	No
Shubuta sandy clay loam, 5 to 8 percent slopes, severely eroded	0.02	No	Moderate	Yes	No	Good	Well drained	No
Shubuta sandy clay loam, 8 to 12 percent slopes, severely eroded	0.15	No	Severe	Yes	No	Fair	Well drained	No
Smithdale fine sandy loam, 15 to 35 percent slopes	7.64	No	Severe	Yes	No	Fair	Well drained	No
Smithdale fine sandy loam, 8 to 12 percent slopes, eroded	0.34	Yes	Moderate	Yes	No	Fair	Well drained	No
Smithdale fine sandy loam, 8 to 15 percent slopes	2.52	No	Moderate	Yes	No	Fair	Well drained	No
Smithdale loamy fine sand, 5 to 15 percent slopes	0.66	No	Moderate	Yes	No	Fair	Well drained	No
Smithdale sandy loam, 2 to 5 percent slopes	1.04	Yes	Low	No	No	Good	Well drained	No
Smithdale-Lucy association, 12 to 40 percent slopes	3.37	No	Severe	Yes	No	Fair	Well drained	No
Smithdale-Lucy association, hilly	0.06	No	Severe	Yes	No	Fair	Well drained	No
Stough fine sandy loam	0.36	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Stough fine sandy loam, 0 to 2 percent slopes	1.65	Yes	Low	Yes	No	Good	Somewhat poorly drained	No
Stough loam, 0 to 2 percent slopes	2.15	Yes	Low	Yes	No	Good	Somewhat poorly drained	No

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Sumter clay, 5 to 12 percent slopes, severely eroded	0.40	No	Severe	Yes	No	Fair	Well drained	No
Sumter clay, 5 to 8 percent slopes, eroded	0.08	Yes	Moderate	Yes	No	Good	Well drained	No
Susquehanna fine sandy loam, 2 to 5 percent slopes	0.09	Yes	Moderate	No	No	Good	Somewhat poorly drained	No
Susquehanna fine sandy loam, 5 to 8 percent slopes, eroded	0.90	Yes	Severe	Yes	No	Good	Somewhat poorly drained	No
Sweatman association, hilly	2.70	No	Severe	Yes	No	Fair	Well drained	No
Sweatman fine sandy loam, 15 to 35 percent slopes	0.11	No	Severe	Yes	No	Fair	Well drained	No
Sweatman fine sandy loam, 2 to 5 percent slopes	0.74	Yes	Moderate	No	No	Good	Well drained	No
Sweatman fine sandy loam, 8 to 17 percent slopes, eroded	4.37	No	Severe	Yes	No	Fair	Well drained	No
Sweatman-Smithdale complex, 8 to 20 percent slopes, eroded	0.08	No	Severe	Yes	No	Fair	Well drained	No
Tilden fine sandy loam, 0 to 2 percent slopes (savannah)	0.17	Yes	Low	Yes	No	Good	Moderately well drained	No
Tilden fine sandy loam, 2 to 5 percent slopes, eroded (savannah)	0.15	Yes	Low	No	No	Fair	Moderately well drained	No
Trebloc silt loam, frequently flooded	0.82	Yes	Severe	Yes	No	Good	Poorly drained	No
Una and Urbo soils, frequently flooded	1.08	No	Moderate	Yes	No	Fair	Poorly drained	No
Vaiden and Oktibbeha silt loams, deep, 2 to 5 percent slopes	0.33	Yes	Moderate	No	No	Good	Somewhat poorly drained	No
Vaiden and Oktibbeha silt loams, deep, 5 to 8 percent slopes	1.76	Yes	Moderate	Yes	No	Good	Somewhat poorly drained	No
Vaiden clay, deep, 0 to 2 percent slopes	0.22	Yes	Moderate	Yes	No	Good	Somewhat poorly drained	No
Vaiden clay, deep, 2 to 5 percent slopes, eroded	0.11	Yes	Moderate	No	No	Good	Somewhat poorly drained	No
Vaiden clay, deep, 5 to 8 percent slopes, eroded	0.20	Yes	Moderate	Yes	No	Good	Somewhat poorly drained	No

APPENDIX C-1
Soil Associations Crossed by the Proposed Southeast Expansion Project

Soil Series	Cumulative Miles Traversed	Prime Farmland	Erosion Potential	Hydric Soils	Rock	Revegetation Potential	Drainage Characteristics	Severe Compaction Potential
Vaiden clay, deep, 8 to 12 percent slopes, eroded	0.04	No	Severe	Yes	No	Fair	Somewhat poorly drained	No
Wahee fine sandy loam (izagora)	1.14	Yes	Low	Yes	No	Good	Moderately well drained	No

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Notes:

A Erosion potential based on land capability subclass. High potential includes Subclasses Ve through VIIIe. Moderate potential includes Subclasses IIIe and IVe. Low potential includes all other subclasses.

B Includes areas where rock may be found within 60 inches below ground surface.

C Parameters of classification of soils with poor revegetation potential include those that are highly acidic, soils with slopes greater than 8 percent, and soils with greater than 15 percent coarse fragments (rocks and stones) in the surface layer of soil.

D Soils with clay loam or finer textures and somewhat poor to very poor drainage characteristics are considered to have severe compaction potential.

APPENDIX C-2
Soils at Aboveground Facilities on the Proposed Southeast Expansion Project

Facility	MP	Soil Series	Prime Farmland	Erosion Potential[A]	Hydric/ Non-Hydric	Rock[B]	Revegetation Potential[C]	Drainage Characteristics	Severe Compaction Potential[D]
Compressor Stations									
Delhi Compressor Station	NA	Calhoun-Calloway silt loams, gently rolling	Yes	Low	Hydric	No	Good	Moderately well drained	No
Harrisville Compressor Station	0.0	Smithdale fine sandy loam, 15 to 35 percent slopes	No	Severe	Hydric	No	Fair	Well drained	No
Destin Compressor Station	82.9	Mantachie, Bibb and Iuka soils	No	Severe	Hydric	No	Good	Moderately well drained	No
Meter and Regulation Facilities									
CenterPoint M&R Station	NA	Grenada silt loam	Yes	Moderate	Non-Hydric	No	Good	Moderately well	No
Southern Natural M&R Station	45.7	Stough fine sandy loam, 0 to 2 percent slopes	Yes	Low	Hydric	No	Good	Somewhat poorly drained	No
Tennessee Gas M&R Station	72.5	Heidel-Troup association, hilly	No	Severe	Hydric	No	Fair	Well drained	No
Destin M&R Station	82.9	Mantachie, Bibb, and Iuka soils	No	Severe	Hydric	No	Good	Moderately well drained	No
Transco M&R Station	110.8	Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes	No	Severe	Hydric	No	Fair	Well drained	No
Valves and Other Facilities									
Mainline Valve No. 1	0.0	Smithdale fine sandy loam, 15 to 35 percent slopes	No	Severe	Hydric	No	Fair	Well drained	No
Mainline Valve No. 2	14.9	Savannah loam, 5 to 8 percent slope	Yes	Moderate	Hydric	No	Fair	Moderately well drained	No
Mainline Valve No. 3	30.3	Ora fine sandy loam, 2 to 5 percent slopes	Yes	Low	Non-hydric	No	Fair	Moderately well drained	No
Mainline Valve No. 4	45.7	Stough fine sandy loam, 0 to 2 percent slopes	Yes	Low	Hydric	No	Good	Somewhat poorly drained	No
Mainline Valve No. 5	60.0	Heidel-Troup association, hilly	No	Severe	Hydric	No	Fair	Well drained	No
Side Valve	72.4	Sweatman association, hilly	No	Severe	Hydric	No	Fair	Well drained	no

APPENDIX C-2
Soils at Aboveground Facilities on the Proposed Southeast Expansion Project

Facility	MP	Soil Series	Prime Farmland	Erosion Potential[A]	Hydric/ Non-Hydric	Rock[B]	Revegetation Potential[C]	Drainage Characteristics	Severe Compaction Potential[D]
Mainline Valve No. 6	75.4	McLaurin loamy sand, 2 to 5 percent slopes	Yes	Low	Non-Hydric	No	Good	Well drained	No
Mainline Valve No. 7	91.3	Savannah fine sandy loam, 5 to 8 percent slopes	Yes	Moderate	Hydric	No	Fair	Moderately well drained	No
Mainline Valve No. 8	110.8	Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes	No	Severe	Hydric	No	Fair	Well drained	No

APPENDIX D

WATERBODY CROSSINGS

APPENDIX D
Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
42-INCH MAINLINE PIPELINE									
Simpson County, Mississippi									
S1CSI013	0.64	0.64	Unnamed	Intermittent	4	A,C	Whites	Simpson	Open Cut
S9CSI005	1.34	1.38	Unnamed	Pond	300	A,C	Star	Simpson	Workspace Only
S1ASI001	1.55	1.56	Unnamed	Pond	25	A,C	Star	Simpson	Workspace Only
S1CSI010	1.59	1.59	Unnamed	Intermittent	6	A,C	Star	Simpson	Workspace Only
S1CSI011	1.62	1.63	Unnamed	Perennial	20	A,C	Star	Simpson	Open Cut
S1CSI012	1.76	1.84	Unnamed	Intermittent	10	A,C	Star	Simpson	Open Cut
S1DSI007R	2.25	2.28	Limestone Creek	Perennial	30	A,C	Star	Simpson	Open Cut
S1DSI008R	3.02	3.03	Unnamed	Intermittent	6	A,C	Star	Simpson	Open Cut
S1DSI009R	3.35	3.37	Unnamed	Intermittent	6	A,C	Star	Simpson	Open Cut
S1DSI010R	3.88	3.89	Unnamed	Intermittent	5	A,C	Star	Simpson	Open Cut
S1DSI013	5.10	5.11	Unnamed	Intermittent	8	A,C	Star	Simpson	Open Cut
S1DSI014	5.18	5.18	Unnamed	Perennial	18	A,C	Star	Simpson	Open Cut
S9CSI002	5.42	5.43	Unnamed	Perennial	5	A,C	Star	Simpson	Open Cut
S9CSI001	5.43	5.44	Unnamed	Perennial	40	A,C	Star	Simpson	Open Cut
S1BSI001	5.84	5.85	Unnamed	Intermittent	2	A,C	Star	Simpson	Open Cut
S1BSI002	5.96	6.02	Unnamed	Intermittent	3	A,C	Star	Simpson	Open Cut
S1BSI003	6.18	6.19	Unnamed	Intermittent	4	A,C	Star	Simpson	Open Cut
S1DSI011R	6.85	6.86	Unnamed	Perennial	9	A,C	Star	Simpson	Open Cut
S1DSI004R	7.12	7.13	Little Creek Tributary	Perennial	8	A,C	Star	Simpson	Open Cut
S1DSI005R	7.97	7.99	Unnamed	Intermittent	6	A,C	Star	Simpson	Open Cut
S1DSI002	8.37	8.38	Unnamed	Intermittent	4	A,C	Star	Simpson	Open Cut
S1DSI003	8.48	8.51	Unnamed	Intermittent	4	A,C	Star	Simpson	Open Cut

APPENDIX D
Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S1CSI009	10.41	10.43	Unnamed	Perennial	70	A,C	Braxton	Simpson	Open Cut
S1CSI001	10.60	10.60	Unnamed	Intermittent	10	A,C	Braxton	Simpson	Workspace Only
S1CSI002	10.70	10.71	Unnamed	Intermittent	8	A,C	Braxton	Simpson	Open Cut
S1CSI004	10.86	10.89	Unnamed	Intermittent	10	A,C	Braxton	Simpson	Open Cut
S1CSI005	11.00	11.02	Unnamed	Intermittent	10	A,C	Braxton	Simpson	Open Cut
S1CSI006	11.36	11.39	Unnamed	Intermittent	25	A,C	Braxton	Simpson	Open Cut
S1CSI007	11.88	11.89	Unnamed	Intermittent	3	A,C	Braxton	Simpson	Open Cut
S1BSI019	12.32	12.32	Dabbs Creek Tributary	Perennial	15	A,C	Braxton	Simpson	Workspace Only
S1BSI019A	12.40	12.43	Dabbs Creek	Perennial	18	A,C	Braxton	Simpson	HDD
S1DSI006R	12.61	12.62	Unnamed	Perennial	30	A,C	Braxton	Simpson	HDD
S1BSI020	13.61	13.62	Dabbs Creek Tributary	Perennial	6	A,C	Braxton	Simpson	Open Cut
S1BSI017	14.32	14.32	Indian Creek	Intermittent	3	A,C	Braxton	Simpson	Open Cut
S9BSI003	14.58	14.61	Unnamed	Intermittent	3	A, C	Braxton	Simpson	Open Cut
S9BSI001	15.63	15.64	Unnamed	Intermittent	3	A,C	Braxton	Simpson	Open Cut
S1ASI005	16.13	16.15	Campbell Creek	Perennial	70	A,C	Braxton	Simpson	HDD
S1ASI006	16.48	16.52	Unnamed	Perennial	10	A,C	Puckett	Simpson	Open Cut
S1ASI007	17.16	17.18	Unnamed	Perennial	10	A,C	Puckett	Simpson	Open Cut
S1DSI012	17.96	17.98	Strong River	Perennial	60	A,C	Puckett	Simpson	HDD
S1BSI007	18.58	18.59	Unnamed	Intermittent	4	A,C	Puckett	Simpson	Open Cut
S1BSI008	18.66	18.68	Unnamed	Intermittent	12	A,C	Puckett	Simpson	Open Cut
S1BSI009	18.77	18.77	Unnamed	Intermittent	8	A,C	Puckett	Simpson	Open Cut
S1BSI009B	18.78	18.78	Unnamed	Intermittent	6	A,C	Puckett	Simpson	Workspace Only
S1BSI011	19.54	19.55	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1BSI012A	19.61	19.62	Unnamed	Intermittent	5	A,C	Puckett	Simpson	Open Cut

APPENDIX D
Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S1BSI012B	19.62	19.64	Unnamed	Intermittent	5	A,C	Puckett	Simpson	Open Cut
S1ASI010	19.88	19.90	Unnamed	Perennial	30	A,C	Puckett	Simpson	Open Cut
S1ASI011	20.46	20.47	Unnamed	Intermittent	40	A,C	Puckett	Simpson	Open Cut
S1BSI014B	21.01	21.01	Unnamed	Perennial	4	A,C	Puckett	Simpson	Workspace Only
S1BSI014	21.03	21.06	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1BSI015	21.17	21.19	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1BSI016	21.44	21.46	Unnamed	Perennial	8	A,C	Puckett	Simpson	Open Cut
S1ASI012	21.63	21.65	Unnamed	Intermittent	10	A,C	Puckett	Simpson	Open Cut
S1ASI012B	21.65	21.65	Unnamed	Intermittent	4	A,C	Puckett	Simpson	Workspace Only
S1ASI013	21.66	21.67	Crooked Creek	Perennial	20	A,C	Puckett	Simpson	Open Cut
S1ASI014	21.91	21.93	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1ASI014B	21.92	21.94	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1ASI015	22.10	22.11	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1ASI016	22.64	22.65	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Open Cut
S1ASI017	22.72	22.73	Unnamed	Intermittent	5	A,C	Puckett	Simpson	Open Cut
S1ASI019	23.14	23.14	Unnamed	Intermittent	2	A,C	Puckett	Simpson	Workspace Only
S1DSI001	24.42	24.43	Little Rocky Creek	Intermittent	5	A,C	White Oak	Simpson	Open Cut
S9ASI020	24.66	24.69	Unnamed	Perennial	15	A,C	White Oak	Simpson	Open Cut
S9ASI021	24.74	24.75	Unnamed	Perennial	15	A,C	White Oak	Simpson	Open Cut
S9ASI023	24.79	24.81	Unnamed	Intermittent	3	A,C	White Oak	Simpson	Open Cut
S9ASI022	24.82	24.83	Unnamed	Intermittent	3	A,C	White Oak	Simpson	Open Cut
S9ASI024	25.02	25.03	Unnamed	Intermittent	2	A,C	White Oak	Simpson	Workspace Only
S9ASI025	25.11	25.12	Unnamed	Intermittent	3	A,C	White Oak	Simpson	Open Cut

APPENDIX D
Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S9ASI026	25.13	25.17	Unnamed	Intermittent	3	A,C	White Oak	Simpson	Open Cut
S9DSI001	25.84	25.86	Rocky Creek	Perennial	45	A,C	White Oak	Simpson	Open Cut
S1ASI024	26.46	26.46	Unnamed	Intermittent	3	A,C	White Oak	Simpson	Open Cut
S1ASI025	26.64	26.64	Unnamed	Perennial	8	A,C	White Oak	Simpson	Open Cut
S1ASI026	26.65	26.66	Unnamed	Intermittent	5	A,C	White Oak	Simpson	Open Cut
S1ASI027	27.08	27.09	Unnamed	Perennial	10	A,C	White Oak	Simpson	Open Cut
S1ASI028	27.82	27.82	Unnamed	Intermittent	3	A,C	White Oak	Simpson	Open Cut
S1ASI029	28.07	28.08	Unnamed	Intermittent	5	A,C	Magee North	Simpson	Open Cut
S1ASM001	29.10	29.11	Unnamed	Intermittent	2	A	Magee North	Smith	Open Cut
Smith County, Mississippi									
S1ASM002	29.63	29.63	Unnamed	Perennial	5	A	Magee North	Smith	Open Cut
S1ASM003	30.02	30.04	Unnamed	Intermittent	4	A	Magee North	Smith	Open Cut
S1ASM004	30.41	30.46	Unnamed	Intermittent	3	A	Magee North	Smith	Open Cut
S1BSM002	30.65	30.65	Unnamed	Intermittent	3	A	Magee North	Smith	Open Cut
S1BSM006B	30.74	30.77	Unnamed	Intermittent	4	A	Magee North	Smith	Open Cut
S1BSM004	31.02	31.03	Clear Creek	Intermittent	10	A	Magee North	Smith	Open Cut
S1BSM005	31.08	31.09	Unnamed	Intermittent	3	A	Magee North	Smith	Open Cut
S1BSM006	31.20	31.21	Unnamed	Intermittent	4	A	Cohay	Smith	Workspace Only
S1BSM008	32.51	32.54	Unnamed	Intermittent	4	A	Cohay	Smith	Open Cut
S1BSM009	32.60	32.65	Unnamed	Intermittent	4	A	Cohay	Smith	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[(a)]	USGS Quad	County	Crossing Method
S1BSM010	32.64	32.68	Unnamed	Intermittent	4	A	Cohay	Smith	Open Cut
S1ASM007	33.01	33.02	Unnamed	Intermittent	10	A	Cohay	Smith	Open Cut
S1ASM008	33.12	33.16	Unnamed	Perennial	24	A	Cohay	Smith	Open Cut
S1ASM009	33.26	33.29	Unnamed	Intermittent	10	A	Cohay	Smith	Open Cut
S1ASM010	33.78	33.79	Unnamed	Intermittent	3	A	Cohay	Smith	Open Cut
S1ASM011	34.13	34.14	Oakohay Creek	Perennial	45	A	Cohay	Smith	HDD
S1CSM005	34.63	34.64	Beaver Creek	Perennial	15	A	Cohay	Smith	HDD
S1CSM006	34.72	34.72	Unnamed	Perennial	10	A	Cohay	Smith	Open Cut
S1DSM014	35.31	35.31	Unnamed	Intermittent	4	A	Cohay	Smith	Open Cut
S1DSM016	35.48	35.57	Unnamed	Intermittent	4	A	Cohay	Smith	Open Cut
S1ASM012	36.14	36.14	Unnamed	Perennial	2	A	Cohay	Smith	Open Cut
S1DSM011	36.53	36.54	Unnamed	Intermittent	2	A	Cohay	Smith	Open Cut
S1DSM012	36.68	36.76	Unnamed	Perennial	20	A	Cohay	Smith	Open Cut
S1CSM008	38.19	38.20	Unnamed	Perennial	12	A	Cohay	Smith	Open Cut
S1CSM008B	38.21	38.21	Unnamed	Perennial	4	A	Cohay	Smith	Open Cut
S1DSM005	39.04	39.12	Unnamed	Intermittent	3	A	Center Ridge	Smith	Open Cut
S1DSM006	39.20	39.21	Unnamed	Perennial	15	A	Center Ridge	Smith	Open Cut
S1DSM007	39.45	39.47	Unnamed	Intermittent	3	A	Center Ridge	Smith	Open Cut
S9CSM010	39.76	39.76	Unnamed	Intermittent	6	A	Center Ridge	Smith	Open Cut
S1DSM008D	40.03	40.04	Unnamed	Intermittent	11	A	Center Ridge	Smith	Open Cut
S1DSM008E	40.11	40.11	Unnamed	Perennial	11	A	Center Ridge	Smith	Open Cut
S1DSM008B	40.45	40.48	Unnamed	Intermittent	25	A	Center Ridge	Smith	Open Cut

APPENDIX D
Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S1DSM009	40.90	40.90	Unnamed	Intermittent	2	A	Center Ridge	Smith	Open Cut
S1DSM010	41.06	41.07	Unnamed	Intermittent	2	A	Center Ridge	Smith	Open Cut
S1CSM001	41.30	41.31	Unnamed	Intermittent	3	A	Center Ridge	Smith	Open Cut
S1CSM002	41.39	41.39	Unnamed	Intermittent	3	A	Center Ridge	Smith	Open Cut
S1CSM003	42.23	42.24	Unnamed	Intermittent	9	A	Center Ridge	Smith	Open Cut
S1CSM004	42.35	42.36	Unnamed	Perennial	20	A	Center Ridge	Smith	Open Cut
S1DSM001	43.01	43.05	Unnamed	Intermittent	4	A	Center Ridge	Smith	Open Cut
S9CSM009	43.86	43.91	Unnamed	Perennial	9	A	Center Ridge	Smith	Open Cut
S9CSM006	44.16	44.20	Leaf River	Perennial	140	A	Center Ridge	Smith	HDD
S9CSM005	44.22	44.26	Unnamed	Intermittent	10	A	Center Ridge	Smith	HDD
S9CSM004	44.36	44.37	Unnamed	Intermittent	8	A	Center Ridge	Smith	Open Cut
S9CSM003	44.64	46.66	Unnamed	Intermittent	7	A	Center Ridge	Smith	Open Cut
S9CSM002	45.21	45.21	Unnamed	Intermittent	3	A	Center Ridge	Smith	Workspace Only
S9CSM001	45.29	45.30	West Tallahala River Tributary	Intermittent	10	A	Center Ridge	Smith	HDD
S9BSM001	45.33	45.36	West Tallahala River	Perennial	200	A	Center Ridge	Smith	HDD
S9BSM002	45.78	45.79	Unnamed	Intermittent	10	A	Center Ridge	Smith	Open Cut
S9BSM003	46.00	46.03	Unnamed	Intermittent	2	A	Center Ridge	Smith	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S9BSM004	46.14	46.14	Unnamed	Intermittent	10	A	Center Ridge	Smith	Open Cut
S1DSM019	47.23	47.25	Unnamed	Perennial	20	A	Bay Springs	Smith	Open Cut
S1DSM020	48.33	48.34	Unnamed	Perennial	6	A	Bay Springs	Smith	Open Cut
S1DSM021	48.37	48.38	Unnamed	Perennial	5	A	Bay Springs	Smith	Open Cut
S1DSM022	48.73	48.75	Unnamed	Intermittent	5	A	Bay Springs	Smith	Open Cut
S1CSM009	49.07	49.07	Unnamed	Intermittent	3	A	Bay Springs	Smith	Workspace Only
S1CSM010	49.19	49.20	Unnamed	Intermittent	2	A	Bay Springs	Smith	Open Cut
S1CSM010B	49.28	49.33	Unnamed	Intermittent	3	A	Bay Springs	Smith	Open Cut
Jasper County, Mississippi									
S1CSM011	51.48	51.48	Unnamed	Intermittent	10	A	Bay Springs	Jasper	Workspace Only
S1CSM012	51.60	51.60	Unnamed	Intermittent	10	A	Bay Springs	Jasper	Open Cut
S1DJS015R	51.68	51.68	Unnamed	Intermittent	6	A	Bay Springs	Jasper	Open Cut
S1CSM013	51.79	51.80	Unnamed	Perennial	20	A	Bay Springs	Jasper	Open Cut
S1AJS001	53.42	53.44	Unnamed	Pond	400*	A	Waldrup	Jasper	Open Cut
S1AJS002	53.47	53.50	Unnamed	Perennial	4	A	Waldrup	Jasper	Open Cut
S1AJS003	53.56	53.58	Unnamed	Perennial	15	A	Waldrup	Jasper	Open Cut
S9BJS006	54.21	54.22	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S9BJS007	54.56	54.58	Unnamed	Intermittent	10	A	Waldrup	Jasper	Open Cut
S1CJS002A	54.90	54.91	Unnamed	Perennial	3	A	Waldrup	Jasper	Open Cut
S1CJS004	55.51	55.51	Unnamed	Perennial	3	A	Waldrup	Jasper	Open Cut
S9BSM004	55.76	55.78	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S9BJS003	55.83	55.85	Tallahoma Creek	Perennial	80	A	Waldrup	Jasper	HDD
S9BJS005	55.92	55.94	Tallahoma Creek	Perennial	80	A	Waldrup	Jasper	HDD
S1DJS020	56.63	56.65	Unnamed	Perennial	15	A	Waldrup	Jasper	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[(a)]	USGS Quad	County	Crossing Method
S1AJS006	57.75	57.75	Unnamed	Perennial		A	Waldrup	Jasper	Workspace Only
S1AJS007	58.58	58.58	Unnamed	Perennial	4	A	Waldrup	Jasper	Workspace Only
S1DJS003	59.96	59.96	Unnamed	Intermittent	3	A	Waldrup	Jasper	Open Cut
S1BJS001	60.31	60.32	Unnamed	Intermittent	5	A	Waldrup	Jasper	Workspace Only
S1BJS002	60.64	60.64	Unnamed	Intermittent	5	A	Waldrup	Jasper	Open Cut
S1BJS003	60.71	60.74	Unnamed	Perennial	25	A	Waldrup	Jasper	Open Cut
S1BJS004	61.23	61.26	Unnamed	Perennial	15	A	Waldrup	Jasper	Open Cut
S1BJS005	62.24	62.25	Unnamed	Intermittent	10	A	Waldrup	Jasper	Open Cut
S1BJS006	62.55	62.57	Tallahala Creek	Perennial	40	A	Waldrup	Jasper	HDD
S1BJS010	62.82	62.83	Unnamed	Intermittent	6	A	Waldrup	Jasper	Open Cut
S1BJS011	63.10	63.15	Unnamed	Intermittent	3	A	Waldrup	Jasper	Open Cut
S1BJS011B	63.13	63.14	Unnamed	Intermittent	3	A	Waldrup	Jasper	Workspace Only
S1BJS012	63.14	63.15	Unnamed	Perennial	4	A	Waldrup	Jasper	Open Cut
S1BJS013	63.21	63.23	Unnamed	Perennial	3	A	Waldrup	Jasper	Open Cut
S1BJS007	63.70	63.71	Unnamed	Intermittent	6	A	Waldrup	Jasper	Open Cut
S1BJS008	64.03	64.03	Unnamed	Intermittent	3	A	Waldrup	Jasper	Open Cut
S1BJS009	64.03	64.04	Bogue Ealiah Creek	Perennial	15	A	Waldrup	Jasper	Open Cut
S1CJS001	65.26	65.26	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S1CJS002	65.40	65.40	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S1DJS017	66.15	66.18	Unnamed	Intermittent	4	A	Waldrup	Jasper	Open Cut
S1DJS017A	66.18	66.18	Unnamed	Intermittent	4	A	Waldrup	Jasper	Open Cut
S1DJS011	66.90	66.91	Unnamed	Intermittent	9	A	Waldrup	Jasper	Open Cut
S1DJS012	67.25	67.27	Unnamed	Intermittent	4	A	Waldrup	Jasper	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[(a)]	USGS Quad	County	Crossing Method
S1AJS015	67.35	67.39	Unnamed	Intermittent	7	A	Waldrup	Jasper	Open Cut
S1AJS015B	67.36	67.43	Unnamed	Intermittent	4	A	Waldrup	Jasper	Open Cut
S1AJS015C	67.43	67.43	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S1AJS016	67.80	67.80	Unnamed	Intermittent	3	A	Waldrup	Jasper	Open Cut
S1AJS017	67.87	67.97	Unnamed	Perennial	20	A	Waldrup	Jasper	Open Cut
S1AJS017B	67.94	67.94	Unnamed	Intermittent	2	A	Waldrup	Jasper	Workspace Only
S1AJS008	68.79	68.81	Unnamed	Intermittent	4	A	Waldrup	Jasper	Open Cut
S1AJS009	68.87	68.87	Unnamed	Intermittent	2	A	Waldrup	Jasper	Workspace Only
S1AJS010	68.90	68.90	Unnamed	Intermittent	1	A	Waldrup	Jasper	Workspace Only
S1AJS011	69.08	69.08	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S1AJS012	69.27	69.27	Unnamed	Intermittent	2	A	Waldrup	Jasper	Open Cut
S1AJS013	69.33	69.34	Unnamed	Perennial	17	A	Waldrup	Jasper	HDD
S1AJS014	69.38	69.39	Unnamed	Intermittent	39	A	Waldrup	Jasper	HDD
S1AJS018	69.60	69.60	Unnamed	Intermittent	8	A	Waldrup	Jasper	HDD
S1DJS005	70.15	70.16	Unnamed	Perennial	25	A	Waldrup	Jasper	Open Cut
S1DJS006B	70.46	70.47	Unnamed	Intermittent	5	A	Waldrup	Jasper	Open Cut
S1DJS006	70.46	70.48	Unnamed	Intermittent	5	A	Waldrup	Jasper	Open Cut
S1DJS007	70.97	70.98	Unnamed	Intermittent	5	A	Waldrup	Jasper	Open Cut
S1DJS008	71.71	71.73	Unnamed	Intermittent	3	A	Waldrup	Jasper	Open Cut
S1DJS010	71.87	71.88	Unnamed	Perennial	7	A	Waldrup	Jasper	Workspace Only
S1DJS009	71.88	71.90	Unnamed	Perennial	20	A	Waldrup	Jasper	Open Cut
S1DJS002	72.69	72.71	Unnamed	Pond	75	A	Waldrup	Jasper	Open Cut
S1DJS001	74.35	74.36	Little Bogue Homo Tributary	Perennial	10	A	Heidelberg	Jasper	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[(a)]	USGS Quad	County	Crossing Method
Clarke County, Mississippi									
S1DCK008	77.91	77.92	Unnamed	Pond	45*	A	Heidelberg	Clarke	Workspace Only
S1DCK009	78.05	78.06	Unnamed	Intermittent	6	A	Heidelberg	Clarke	Open Cut
S1DCK010	78.06	78.07	Unnamed	Perennial	6	A	Heidelberg	Clarke	Open Cut
S1DCK011	78.15	78.18	Unnamed	Perennial	6	A	Heidelberg	Clarke	Workspace Only
S9BCK001	78.30	78.31	Unnamed	Intermittent	5	A	Heidelberg	Clarke	Workspace Only
S1DCK012	78.54	78.56	Unnamed	Perennial	3	A	Heidelberg	Clarke	Open Cut
S1DCK013	78.97	78.98	Unnamed	Intermittent	6	A	Heidelberg	Clarke	Open Cut
S1BCK001	79.56	79.57	Unnamed	Intermittent	3	A	Heidelberg	Clarke	Open Cut
S1BCK003	80.24	80.28	Unnamed	Intermittent	10	A	Heidelberg	Clarke	Open Cut
S1BCK004	81.11	81.14	Unnamed	Perennial	25	A	Heidelberg	Clarke	Open Cut
S1BCK005	81.97	81.98	Unnamed	Intermittent	6	A	Hale	Clarke	Open Cut
S9ACK017	82.41	82.41	Unnamed	Intermittent	3	A	Hale	Clarke	Open Cut
S9ACK015	82.59	82.60	Unnamed	Pond	30	A	Hale	Clarke	HDD
S9ACK014	82.62	82.67	Unnamed	Pond	30	A	Hale	Clarke	HDD
S9ACK013	82.67	82.69	Shubuta Creek	Perennial	50	A	Hale	Clarke	HDD
S9ACK012	83.06	83.07	Unnamed	Perennial	7	A	Hale	Clarke	Open Cut
S9ACK011	83.09	83.09	Unnamed	Intermittent	7	A	Hale	Clarke	Open Cut
S9ACK010	83.14	83.15	Unnamed	Intermittent	5	A	Hale	Clarke	Open Cut
S1DCK019	83.45	83.93	Unnamed	Intermittent	8	A	Hale	Clarke	Open Cut
S1BCK036	83.93	83.93	Bogue Homo Creek Tributary	Intermittent	4	A	Hale	Clarke	Open Cut
S1BCK006	84.58	84.60	Unnamed	Intermittent	6	A	Hale	Clarke	Open Cut
S1BCK007	84.73	84.74	Bogue Homo Creek	Perennial	40	A	Hale	Clarke	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S1BCK008	85.23	85.27	Unnamed	Intermittent	1	A	Hale	Clarke	Open Cut
S1BCK009	85.76	85.77	Unnamed	Intermittent	5	A	Hale	Clarke	Open Cut
S1BCK010	86.04	86.15	Unnamed	Intermittent	3	A	Hale	Clarke	Workspace Only
S1BCK011	86.14	86.17	Unnamed	Intermittent	3	A	DeSoto	Clarke	Open Cut
S1BCK012	86.15	86.19	Unnamed	Intermittent	3	A	DeSoto	Clarke	Workspace Only
S1BCK013	86.18	86.31	Unnamed	Intermittent	6	A	DeSoto	Clarke	Workspace Only
S1BCK014	86.33	86.34	Watts Creek	Perennial	10	A	DeSoto	Clarke	Open Cut
S9DCK005	87.77	87.81	Unnamed	Pond	150	A	DeSoto	Clarke	HDD
S9ACK023	87.86	87.86	Unnamed	Intermittent	10	A	DeSoto	Clarke	HDD
S9ACK022	87.88	87.88	Unnamed	Intermittent	5	A	DeSoto	Clarke	HDD
S9ACK021	87.94	87.94	Unnamed	Intermittent	3	A	DeSoto	Clarke	HDD
S9ACK020	87.96	87.97	Unnamed	Intermittent	4	A	DeSoto	Clarke	HDD
S9BCK002	88.31	88.31	Unnamed	Intermittent	10	A	DeSoto	Clarke	Open Cut
S9BCK003	88.80	88.81	Unnamed	Intermittent	4	A	DeSoto	Clarke	Open Cut
S9BCK005	89.29	89.35	Chickasawhay River	Perennial	200	A	DeSoto	Clarke	HDD
S9BCK006	89.34	89.35	Chickasawhay River Tributary	Intermittent	8	C	DeSoto	Clarke	Workspace Only
S1BCK034	90.59	90.63	Cooniper Creek	Perennial	25	A	DeSoto	Clarke	Open Cut
S1DCK016	91.08	91.09	Cooniper Creek	Perennial	20	A	DeSoto	Clarke	Open Cut
S1BCK018	91.56	91.66	Unnamed	Intermittent	5	A	DeSoto	Clarke	Open Cut
S1BCK019	92.12	92.13	Unnamed	Intermittent	4	A	DeSoto	Clarke	Workspace Only
S1BCK020	92.33	92.34	Unnamed	Intermittent	2	A	DeSoto	Clarke	Open Cut
S1BCK021	92.58	92.58	Unnamed	Intermittent	3	A	DeSoto	Clarke	Open Cut
S1BCK022	92.59	92.60	Unnamed	Intermittent	2	A	DeSoto	Clarke	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S1BCK023	93.30	93.42	Unnamed	Intermittent	2	A	DeSoto	Clarke	Open Cut
S1BCK024	93.65	92.67	Unnamed	Intermittent	3	A	Carmichael	Clarke	Open Cut
S1BCK025	93.67	93.74	Unnamed	Perennial	5	A	Carmichael	Clarke	Open Cut
S1BCK026	93.88	93.90	Unnamed	Perennial	11	A	Carmichael	Clarke	Open Cut
S1BCK027	93.99	94.00	Unnamed	Intermittent	3	A	Carmichael	Clarke	Open Cut
S1BCK028	94.00	94.04	Unnamed	Intermittent	3	A	Carmichael	Clarke	Open Cut
S1BCK029	94.35	94.36	Unnamed	Intermittent	2	A	Carmichael	Clarke	Open Cut
S1CCK002	94.91	94.93	Unnamed	Perennial	10	A	Carmichael	Clarke	HDD
S1CCK004	95.14	95.14	Unnamed	Perennial	3	A	Carmichael	Clarke	Workspace Only
S1CCK005	95.37	95.38	Unnamed	Perennial	15	A	Carmichael	Clarke	Open Cut
S1DCK020	95.92	95.93	Unnamed	Intermittent	6	A	Carmichael	Clarke	Open Cut
S1DCK021	95.96	95.97	Unnamed	Intermittent	7	A	Carmichael	Clarke	Open Cut
S1DCK022	96.45	96.47	Unnamed	Perennial	3	A	Carmichael	Clarke	Open Cut
S1BCK017	96.77	96.78	Unnamed	Intermittent	3	A	Carmichael	Clarke	Open Cut
S1DCK001	98.61	98.61	Unnamed	Intermittent	5	A	Carmichael	Clarke	Open Cut
S1DCK002	98.71	98.72	Unnamed	Perennial	4	A	Carmichael	Clarke	Open Cut
S1DCK003	99.39	99.40	Unnamed	Intermittent	6	A	Carmichael	Clarke	Open Cut
S1DCK004	99.85	99.85	Unnamed	Intermittent	5	A	Carmichael	Clarke	Open Cut
S1DCK005	100.35	100.35	Unnamed	Intermittent	1	A	Carmichael	Clarke	HDD
S1DCK006	100.44	100.47	Bucatunna Creek	Perennial	30	A	Carmichael	Clarke	HDD
S1DCK007	100.65	100.67	Unnamed	Intermittent	3	A	Carmichael	Clarke	Open Cut
S9DCK004	101.06	101.07	Unnamed	Intermittent	4	A	Sykes	Clarke	Open Cut
S9DCK003	101.15	101.16	Unnamed	Intermittent	4	A	Sykes	Clarke	Open Cut
S9DCK002	101.16	101.18	Unnamed	Perennial	13	A	Sykes	Clarke	Open Cut
S9DCK001	101.20	101.29	Unnamed	Intermittent	3	A	Sykes	Clarke	Open Cut

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Waterbodies Crossed by the Proposed Southeast Expansion Project

Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[a]	USGS Quad	County	Crossing Method
S1BCK037	102.01	102.02	Cedar Creek Tributary	Intermittent	3	A	Hinton	Clarke	Open Cut
S1CCK006	102.31	102.31	Unnamed	Intermittent	3	A	Hinton	Clarke	Open Cut
S1CCK007	102.83	102.85	Unnamed	Intermittent	5	A	Hinton	Clarke	Open Cut
S1CCK008	102.91	102.93	Unnamed	Intermittent	10	A	Hinton	Clarke	Open Cut
S1BCK016	103.74	103.75	Unnamed	Intermittent	3	A	Hinton	Clarke	Workspace Only
Choctaw County, Alabama									
S1BCW001	104.46	104.47	Unnamed	Perennial	2	E	Hinton	Choctaw	Open Cut
S9ACW012	104.90	104.91	Unnamed	Intermittent	2	E	Hinton	Choctaw	Open Cut
S1BCW002	105.35	105.35	Unnamed	Perennial	15	E	Hinton	Choctaw	Workspace Only
S9ACW013	105.45	105.47	Unnamed	Perennial	1	E	Hinton	Choctaw	Open Cut
S1DCW002	105.46	105.47	Unnamed	Intermittent	9	E	Hinton	Choctaw	Open Cut
S1DCW003	105.78	105.79	Unnamed	Intermittent	9	E	Hinton	Choctaw	Open Cut
S1DCW004	106.17	106.21	Unnamed	Intermittent	5	E	Hinton	Choctaw	Open Cut
S1DCW006	106.80	106.80	Unnamed	Intermittent	4	E	Hinton	Choctaw	Open Cut
S1DCW005	107.34	107.37	Okatuppa Creek	Perennial	30	E	Hinton	Choctaw	HDD
S1DCW008	108.00	108.00	Unnamed	Intermittent	7	E	Hinton	Choctaw	Open Cut
S1DCW009	109.01	109.01	Unnamed	Perennial	5	E	Hinton	Choctaw	Open Cut
S1DCW010	109.55	109.56	Unnamed	Perennial	3	E	Hinton	Choctaw	Open Cut
S1DCW011	109.96	109.96	Unnamed	Perennial	5	E	Hinton	Choctaw	Open Cut
S1DCW012	110.06	110.08	Unnamed	Perennial	5	E	Hinton	Choctaw	Open Cut
S1DCW013	110.30	110.30	Unnamed	Perennial	4	E	Hinton	Choctaw	Open Cut

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Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[(a)]	USGS Quad	County	Crossing Method
ABOVEGROUND FACILITIES									
Feature ID	**Milepost**	**Associated Facility**	**Waterbody Name**	**Waterbody Type**	**Crossing Width (Feet)**	**State Water Quality Classification[(a)]**	**USGS Quad**	**County**	**Crossing Method**
S9DRI001	N/A	Delhi Compressor Station	Unnamed	Intermittent	2	H.I.J	Delhi	Richland	To be rerouted
S1DSI017	N/A	Harrisville Compressor Station	Unnamed	Intermittent	N/A[1]	A,C	Whites	Simpson	N/A[1]
SF9ACK002	N/A	Destin Compressor Station	Unnamed	Perennial	N/A	A	Hale	Clarke	N/A
SF9ACK001	N/A	Destin Compressor Station	Unnamed	Perennial	N/A	A	Hale	Clarke	N/A
ACCESS ROADS									
Feature ID	**Milepost**	**Associated Access Road ID**	**Waterbody Name**	**Waterbody Type**	**Crossing Width (Feet)**	**State Water Quality Classification[(a)]**	**USGS Quad**	**County**	**Crossing Method**
S1DSI016	0.62	AR1BSI004B	Unnamed	Pond	200	A,C	Star	Simpson	N/A[2]
S9BSM006	30.72	AR9BSM001	Unnamed	Intermittent	6	A	Raleigh	Smith	N/A[2]
S9BSM005	30.74	AR9BSM001	Unnamed	Intermittent	8	A	Raleigh	Smith	N/A[2]
S9BSM007	31.44	AR9BSM001	Unnamed	Intermittent	4	A	Raleigh	Smith	N/A[2]
S9BSM008	31.58	AR9BSM001	Unnamed	Intermittent	2	A	Raleigh	Smith	N/A[2]
S9BSM009	31.66	AR9BSM001	Unnamed	Intermittent	10	A	Raleigh	Smith	N/A[2]
S1BSM001AR	44.01	AR1BSM004	Leaf River Tributary	Perennial	10	A	Center Ridge	Smith	N/A[2]
S1BJS014	58.68	AR1BJS002	Tallahoma Creek Tributary	Intermittent	6	A	Lake Como	Jasper	N/A[2]
S1BJS016	69.62	AR1BJS006A	Bogue Homo Creek Tributary	Perennial	10	A	Waldrup	Jasper	N/A[2]

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Feature Identification	Begin Milepost	End Milepost	Waterbody Name	Waterbody Type	Crossing Width (ft)	State Water Quality Classification[(a)]	USGS Quad	County	Crossing Method
S1DJS021	72.48	AR1DJS003	Unnamed	Intermittent	6	A	Heidelberg	Jasper	N/A[2]
S1DJS022	72.63	AR1DJS003	Unnamed	Intermittent	6	A	Heidelberg	Jasper	N/A[2]
S1BCK031	80.93	AR1BCK005	Luke Fluffer Creek	Perennial	10	A	Hale	Clarke	N/A[2]
S1BCK032	81.41	AR1BCK005A	Luke Fluffer Creek	Perennial	20	A	Hale	Clarke	N/A[2]
ARS9ACK010	82.31	AR1BCK005B	Unnamed Tributary to Shubuta Creek	Perennial	15	A	Hale	Clarke	N/A[2]
S1BCK033	82.31	AR1BCK005B	Luke Fluffer Creek	Perennial	20	A	Hale	Clarke	N/A[2]
S1BCK035	83.05	AR1BCK006	Shubuta Creek Tributary	Intermittent	10	A	Hale	Clarke	N/A[2]
S1BCK030	86.14	AR1BCK002	Watts Creek	Perennial	10	A	Desoto	Clarke	N/A[2]
S1DCK024	86.89	AR1DCK001	Unnamed	Intermittent	6	A	Desoto	Clarke	N/A[2]
S1DCW007	106.17	AR1DCW001	Unnamed	Intermittent	3	E	Hinton	Choctaw	N/A[2]

Notes:
(a) State Water Quality Classifications according to the MDEQ and ADEM
A In MS: Fish and Wildlife. In AL: Outstanding Alabama Water
B In AL: Fish and Wildlife
C In MS: Recreation. In AL: Swimming
N/A Not Applicable
* Pipeline centerline does not cross Feature.
1 Feature identified within proximity of aboveground facilities.
2 Feature existing along access roads with culverted stream crossings; no proposed changes or impacts to feature are anticipated.

APPENDIX E

WETLAND CROSSINGS

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

Identifier	County	Begin Milepost	End Milepost	Type	ATWS Impacts (acres)	Permanent Impact (acres)	Temporary Impacts (Acres)	Crossing Method
				Simpson County				
W1CSI003	Simpson, MS	1.65	1.72	PFO	0.00	0.27	0.68	Open Cut
W1DSI008R	Simpson, MS	3.70	3.72	PFO	0.00	0.04	0.10	Open Cut
W1BSI001	Simpson, MS	5.53	5.54	PEM	0.00	0.00	0.0	Work Space Only
W1BSI005	Simpson, MS	6.91	6.93	PFO	0.02	0.03	0.06	Open Cut
W1DSI06R	Simpson, MS	7.49	7.51	PFO	0.00	0.07	0.16	Open Cut
W1DSI005R	Simpson, MS	7.52	7.58	PFO	0.00	0.15	0.36	Open Cut
W1DSI004	Simpson, MS	8.26	8.29	PFO	0.00	0.06	0.14	Open Cut
W1BSI025	Simpson, MS	10.11	10.18	PFO	0.23	0.28	0.70	Open Cut
W1CSI002	Simpson, MS	10.19	10.43	PSS	0.45	0.00	2.38	Open Cut
W9ASI001	Simpson, MS	10.46	10.47	PSS	0.00	0.00	0.01	Open Cut
W9ASI001B	Simpson, MS	10.47	10.48	PSS	0.00	0.00	0.01	Open Cut
W1CSI001	Simpson, MS	11.46	11.49	PSS	0.00	0.00	0.02	Work Space Only
W1CSI004	Simpson, MS	12.61	12.80	PFO/PEM/PSS	0.00	0.12	0.24	Open Cut/HDD[3]
W1BSI026	Simpson, MS	13.02	13.44	PFO	0.32	1.50	3.67	Open Cut
W9BSI003	Simpson, MS	15.48	15.87	PFO	0.55	1.39	3.43	Open Cut
W9BSI001	Simpson, MS	15.94	15.96	PFO	0.00	0.00	0.00	HDD[3]
W9BSI002	Simpson, MS	15.96	15.96	PEM	0.00	0.00	0.00	HDD[3]
W1ASI003	Simpson, MS	16.25	16.26	PEM	0.00	0.00	0.03	Open Cut
W1ASI004A	Simpson, MS	16.45	16.49	PFO	0.00	0.09	0.21	Open Cut
W1BSI008	Simpson, MS	17.48	17.49	PFO	0.00	0.01	0.03	Open Cut
W1BSI007	Simpson, MS	17.49	17.50	PFO	0.00	0.02	0.05	Open Cut
W1BSI009	Simpson, MS	17.53	17.54	PEM	0.00	0.00	0.06	Open Cut
W1BSI0010	Simpson, MS	17.54	17.54	PFO	0.00	0.00	0.00*	Work Space Only
W1BSI0011	Simpson, MS	17.59	17.64	PFO	0.00	0.12	0.27	Open Cut
W1BSI0012	Simpson, MS	17.67	17.68	PFO	0.00	0.02	0.06	Open Cut

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

Identifier	County	Begin Milepost	End Milepost	Type	ATWS Impacts (acres)	Permanent Impact (acres)	Temporary Impacts (Acres)	Crossing Method
W1BSI013	Simpson, MS	17.77	17.82	PFO	0.00	0.11	0.18	Open Cut
W1BSI014	Simpson, MS	18.00	18.01	PEM	0.00	0.00	0.00	HDD[3]
W1DSI010	Simpson, MS	18.05	18.06	PEM	0.00	0.00	0.00	HDD[3]
W1DSI011	Simpson, MS	18.10	18.11	PEM	0.00	0.00	0.00	HDD[3]
W1BSI018	Simpson, MS	18.18	18.22	PFO	0.00	0.00	0.00	HDD[3]
W1BSI019	Simpson, MS	18.23	18.32	PFO	0.00	0.00	0.00	HDD[3]
W1BSI020	Simpson, MS	18.39	18.42	PFO	0.00	0.02	0.07	Open Cut/ HDD[3]
W1BSI022A	Simpson, MS	18.99	19.50	PSS	0.00	0.00	4.49	Open Cut
W1BSI023	Simpson, MS	19.54	19.56	PFO	0.00	0.07	0.18	Open Cut
W1BSI024	Simpson, MS	19.59	19.61	PFO	0.00	0.05	0.13	Open Cut
W1BSI027	Simpson, MS	21.00	21.03	PSS	0.00	0.00	0.04	Work Space Only
W1DSI003	Simpson, MS	24.35	24.42	PSS	0.11	0.00	0.58	Open Cut
W1DSI009	Simpson, MS	25.00	25.02	PFO	0.00	0.05	0.12	Open Cut
W9ASI020	Simpson, MS	25.12	25.16	PFO	0.00	0.08	0.15	Open Cut
W1ASI008	Simpson, MS	26.63	26.65	PSS	0.00	0.00	0.22	Open Cut
W1ASI009	Simpson, MS	28.73	28.76	PEM	0.00	0.00	0.08	Open Cut
W1ASM001	Simpson, MS	29.61	29.63	PEM	0.00	0.00	0.11	Open Cut
Smith County								
W1BSM001	Smith, MS	30.72	30.74	PFO	0.00	0.03	0.07	Open Cut
W1BSM002	Smith, MS	30.77	30.81	PSS	0.00	0.00	0.12	Open Cut
W1ASM002	Smith, MS	33.30	33.32	PFO	0.00	0.07	0.16	Open Cut
W1ASM003	Smith, MS	33.77	33.80	PFO	0.00	0.10	0.24	Open Cut
W1CSM001	Smith, MS	34.18	35.07	PFO	0.80	3.19	7.00	Open Cut/ HDD[3]
W1ASM004	Smith, MS	36.16	36.18	PFO	0.00	0.08	0.19	Open Cut
W1DSM007	Smith, MS	36.55	36.73	PEM	0.00	0.00	0.81	Open Cut
W1DSM008	Smith, MS	36.91	36.95	PFO	0.00	0.09	0.23	Open Cut

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

Identifier	County	Begin Milepost	End Milepost	Type	ATWS Impacts (acres)	Permanent Impact (acres)	Temporary Impacts (Acres)	Crossing Method
W1CSM002	Smith, MS	38.06	38.07	PFO	0.00	0.01	0.02	Open Cut
W1CSM003	Smith, MS	38.17	38.22	PFO	0.00	0.21	0.51	Open Cut
W1DSM003	Smith, MS	39.48	39.50	PFO	0.00	0.04	0.13	Open Cut
W9CSM004	Smith, MS	39.51	39.53	PSS	0.00	0.00	0.14	Open Cut
W9CSM005	SMITH, MS	39.81	39.83	PFO	0.00	0.04	0.10	Open Cut
W1DSM004	Smith, MS	40.63	40.64	PSS	0.00	0.00	0.07	Open Cut
W1DSM005	Smith, MS	40.76	40.77	PSS	0.00	0.00	0.04	Open Cut
W1DSM006	Smith, MS	41.05	41.08	PEM	0.00	0.00	0.13	Open Cut
W9CSM003	Smith, MS	44.40	44.42	PSS	0.00	0.00	0.05	Open Cut
W9CSM002	Smith, MS	44.63	44.76	PSS	0.00	0.00	0.15	Open Cut
W9CSM001	Smith, MS	45.18	45.20	PSS	0.00	0.00	0.11	Open Cut
W9BSM001	Smith, MS	45.93	46.06	PFO	0.00	0.49	1.22	Open Cut
W1DSM010	Smith, MS	47.76	47.79	PFO	0.00	0.06	0.16	Open Cut
W1DSM011	Smith, MS	48.32	48.35	PFO/PEM	0.00	0.07	0.18	Open Cut
W1DSM012	Smith, MS	48.46	48.48	PSS	0.00	0.00	0.03	Work Space Only
Jasper County								
W1AJS001	Jasper, MS	50.74	50.84	PFO	0.00	0.32	0.66	Open Cut
W1DJS007R	Jasper, MS	51.70	51.79	PFO	0.00	0.21	0.53	Open Cut
W1DJS008R	Jasper, MS	51.85	51.94	PFO	0.25	0.32	0.77	Open Cut
W1AJS002	Jasper, MS	52.50	52.53	PFO	0.00	0.04	0.11	Open Cut
W1AJS003	Jasper, MS	52.65	52.65	PSS	0.00	0.00	0.00*	Work Space Only
W1AJS004	Jasper, MS	54.18	54.19	PFO	0.00	0.02	0.04	Open Cut
W1CJS001	Jasper, MS	55.13	55.16	PEM	0.00	0.00	0.12	Open Cut
W1DJS010	Jasper, MS	55.69	55.73	PFO	0.91	2.48	5.42	Open Cut
W1AJS005	Jasper, MS	59.69	59.73	PSS	0.02	0.00	0.07	Open Cut
W1BJS001	Jasper, MS	60.53	60.65	PFO	0.22	0.07	0.20	Open Cut

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

Identifier	County	Begin Milepost	End Milepost	Type	ATWS Impacts (acres)	Permanent Impact (acres)	Temporary Impacts (Acres)	Crossing Method
W1BJS002	Jasper, MS	60.92	60.95	PFO	0.00	0.04	0.08	Open Cut
W1BJS003	Jasper, MS	61.11	61.16	PEM	0.00	0.00	0.21	Open Cut
W1BJS004	Jasper, MS	62.09	62.13	PFO	0.00	0.08	0.19	Open Cut
W1BJS005	Jasper, MS	64.71	64.73	PFO	0.00	0.05	0.14	Open Cut
W1CJS001A	Jasper, MS	65.39	65.45	PFO	0.00	0.16	0.42	Open Cut
W1DJS009	Jasper, MS	65.74	65.91	PFO	0.46	0.52	1.32	Open Cut
W1DJS005	Jasper, MS	66.32	66.97	PSS	1.06	0.00	5.92	Open Cut
W1DJS006	Jasper, MS	67.23	67.29	PFO	0.00	0.19	0.48	Open Cut
W1DJS002	Jasper, MS	70.10	70.21	PFO	0.00	0.37	0.89	Open Cut
W1DJS003	Jasper, MS	70.57	70.66	PEM	0.35	0.00	0.71	Open Cut
W1DJS004	Jasper, MS	70.95	71.00	PEM	0.00	0.00	0.40	Open Cut
W1DJS001	Jasper, MS	73.00	73.08	PEM	0.00	0.00	0.63	Open Cut
Clarke County								
W1DCK007	Clarke, MS	76.41	76.46	PFO	0.00	0.11	0.27	Open Cut
W1DCK006	Clarke, MS	76.49	76.53	PFO	0.00	0.04	0.13	Open Cut
W9ACK024	Clarke, MS	82.17	82.18	PEM	0.00	0.00	0.02	Open Cut
W9ACK023	Clarke, MS	82.19	82.20	PEM	0.02	0.00	0.07	Open Cut
W9ACK022	Clarke, MS	82.26	82.27	PSS	0.00	0.00	0.02	Work Space Only
W9ACK021	Clarke, MS	82.32	82.33	PEM	0.00	0.00	0.03	Work Space Only
W9ACK020	Clarke, MS	82.40	82.41	PEM	0.00	0.00	0.01	Work Space Only
W9ACK018	Clarke, MS	82.44	82.52	PEM/PFO	0.00	0.10	0.22	Open Cut/HDD[3]
W9ACK017	Clarke, MS	82.53	82.57	PEM	0.00	0.00	0.00	HDD[3]
W9ACK015	Clarke, MS	82.78	82.79	PEM	0.00	0.00	0.00	HDD[3]
W9ACK014	Clarke, MS	82.86	82.88	PEM	0.00	0.00	0.06	Open Cut
W9ACK013	Clarke, MS	82.89	82.90	PEM	0.00	0.00	0.03	Open Cut
W9ACK012	Clarke, MS	83.03	83.04	PEM/POW	0.00	0.00	0.15	Open Cut

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

Identifier	County	Begin Milepost	End Milepost	Type	ATWS Impacts (acres)	Permanent Impact (acres)	Temporary Impacts (Acres)	Crossing Method
W9ACK011	Clarke, MS	83.06	83.08	PEM	0.00	0.00	0.16	Open Cut
W9ACK010	Clarke, MS	83.22	83.24	PFO	0.00	0.06	0.13	Open Cut
W1DCK010	Clarke, MS	83.34	83.35	PEM	0.00	0.00	0.07	Open Cut
W1DCK011	Clarke, MS	83.36	83.37	PEM	0.01	0.00	0.01	Work Space Only
W1BCK015	Clarke, MS	83.92	83.95	PFO	0.00	0.10	0.25	Open Cut
W1BCK002	Clarke, MS	85.62	85.63	PEM	0.00	0.00	0.03	Open Cut
W1BCK003	Clarke, MS	86.86	86.93	PEM	0.00	0.00	0.44	Open Cut
W9ACK020A	Clarke, MS	87.93	87.93	PSS	0.00	0.00	0.00	HDD[3]
W9ACK022A	Clarke, MS	88.29	88.30	PFO	0.00	0.04	0.09	Open Cut
W9BCK001	Clarke, MS	88.31	88.37	PFO	0.00	0.19	0.46	Open Cut
W1DCK008R	Clarke, MS	88.93	89.96	PFO	0.28	0.00	0.00	Work Space Only
W9BCK002	Clarke, MS	89.39	89.40	PSS	0.00	0.00	0.00	HDD[3]
W1BCK009	Clarke, MS	91.61	91.68	PFO	0.00	0.21	0.44	Open Cut
W1BCK010	Clarke, MS	92.10	92.13	PFO	0.00	0.06	0.11	Open Cut
W1BCK011	Clarke, MS	92.25	92.26	PFO	0.00	0.02	0.04	Open Cut
W1BCK012	Clarke, MS	93.41	93.55	PSS	0.00	0.00	1.21	Open Cut
W1BCK013	Clarke, MS	93.64	93.66	PSS	0.00	0.00	0.07	Work Space Only
W1CCK001	Clarke, MS	95.36	95.39	PSS	0.00	0.00	0.23	Open Cut
W1BCK006	Clarke, MS	96.96	97.01	PFO	0.00	0.18	0.43	Open Cut
W1BCK007	Clarke, MS	97.11	97.13	PFO	0.00	0.03	0.08	Open Cut
W1BCK008	Clarke, MS	97.64	97.72	PFO	0.00	0.26	0.62	Open Cut
W1DCK001-A	Clarke, MS	98.20	98.24	PSS	0.00	0.00	0.12	Open Cut
W1DCK001-B	Clarke, MS	98.62	98.62	PSS	0.00	0.00	0.00*	Work Space Only
W1DCK001-C	Clarke, MS	99.84	100.44	PSS	0.62	0.00	5.11	Open Cut/HDD[3]
W9DCK001	Clarke, MS	101.03	101.31	PFO	0.00	0.99	2.55	Open Cut

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

Identifier	County	Begin Milepost	End Milepost	Type	ATWS Impacts (acres)	Permanent Impact (acres)	Temporary Impacts (Acres)	Crossing Method
W1BCK016	Clarke, MS	101.61	101.64	PFO	0.00	0.05	0.14	Open Cut
W1BCK017	Clarke, MS	101.92	101.95	PFO	0.00	0.07	0.19	Open Cut
W1CCK002	Clarke, MS	102.79	102.91	PEM/PFO	0.14	0.42	1.05	Open Cut
W1DCK003	Clarke, MS	103.44	103.51	PSS	0.00	0.00	0.40	Open Cut
W1BCK004	Clarke, MS	103.95	103.97	PEM	0.00	0.00	0.13	Open Cut
W1BCK005	Clarke, MS	104.10	104.13	PEM	0.00	0.00	0.14	Open Cut
Choctaw County								
W1BCW001	Clarke, MS	104.33	104.34	PEM	0.00	0.00	0.03	Work Space Only
W1BCW002	Choctaw, AL	104.78	104.79	PEM	0.00	0.00	0.05	Open Cut
W9ACW010	Choctaw, AL	104.79	104.79	PEM	0.00	0.00	0.06	Open Cut
W1BCW003	Choctaw, AL	104.89	104.99	PEM	0.00	0.00	0.29	Open Cut
W1BCW004	Choctaw, AL	105.33	105.38	PSS	0.00	0.00	0.11	Open Cut
W1DCW003	Choctaw, AL	106.56	106.60	PEM	0.00	0.00	0.13	Open Cut
W1DCW002	Choctaw, AL	107.31	107.34	PFO	0.00	0.00	0.00	HDD[3]
W1DCW005	Choctaw, AL	109.00	109.02	PSS	0.00	0.00	0.06	Open Cut
W1DCW006	Choctaw, AL	109.04	109.09	PSS	0.00	0.00	0.17	Open Cut
W1DCW007	Choctaw, AL	109.23	109.26	PEM/PSS	0.00	0.00	0.22	Open Cut
W1DCW008	Choctaw, AL	109.54	109.57	PFO	0.00	0.09	0.22	Open Cut
W1DCW009	Choctaw, AL	109.68	109.74	PFO	0.00	0.17	0.45	Open Cut
W1DCW010	Choctaw, AL	110.04	110.09	PSS	0.00	0.00	0.18	Open Cut
W1DCW011	Choctaw, AL	110.23	110.31	PEM/PFO	0.00	0.23	0.55	Open Cut
W1DCW012	Choctaw, AL	110.35	110.47	PSS	0.00	0.00	0.52	Open Cut
				Grand Total	**6.82**	**17.32**	**68.94**	

APPENDIX E
Wetlands Crossed by the Proposed Southeast Expansion Project

ACCESS ROADS

Milepost	Associated Access Road ID	Wetland ID	NWI Classification	USGS Quad	Crossing Length	Permanent Acreage	Temporary Acreage	Crossing Method
12.9	AR1BSI006A	W1BSI026[4]	PFO	Braxton	N/A	0.00	0.00	N/A
18.3	AR1DSI001	W1BSI019[4]	PFO	Puckett	N/A	0.00	0.00	N/A
43.9	AR1BSM004	W1BSM001A	PEM	Center Ridge	N/A	0.00	0.00	N/A
76.93	AR1BCK001	W1BCK014A	PFO	Heidelberg	N/A	0.00	0.00	N/A
82.2	AR1BCK005B	W1BCK001[4]	PFO	Hale	N/A	0.00	0.00	N/A
86.8	AR1DCK001	W1DCK012[4]	PEM	Desoto	N/A	0.00	0.00	N/A
			Total for Access Roads:		**N/A**	**0.00**	**0.00**	

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1 Impact calculations are based on a 30-foot-wide ROW that will be operationally maintained through forested wetlands, converting to scrub-shrub or emergent wetland.
Scrub-shrub and emergent wetlands will be allowed to naturally revegetate.
2 Temporary ROW calculations are based on a 75-foot construction ROW and acreages of additional temporary workspace.
3 Impacts to vegetation and wetland functions are 0 because the HDD construction impacts will result in no surface impacts.
4 Feature crosses both the centerline and aboveground facilities or access roads; acreages have been split between respective project areas.
*Wetland impacts are less than 0.001 acre and per rounding resulted in zero impacts in the table
PEM = Palustrine emergent
PSS = Palustrine scrub-shrub
PFO = Palustrine forested
POW = Palustrine open water
N/A = Not Applicable

APPENDIX F

EXTENSIVE FORESTED TRACTS ALONG THE PROPOSED SOUTHEAST EXPANSION PROJECT

APPENDIX F
Extensive Forested Tracts Along the Proposed Southeast Expansion Project

County/Parish	Begin MP	End MP	Acres
Simpson	0.00	0.31	7.22
Simpson	1.25	1.64	5.90
Simpson	1.72	1.93	3.73
Simpson	1.94	2.01	0.82
Simpson	2.24	2.29	1.16
Simpson	2.90	3.15	3.20
Simpson	3.52	3.70	3.07
Simpson	3.71	5.55	33.12
Simpson	5.57	6.59	18.11
Simpson	6.81	6.92	2.01
Simpson	7.72	8.05	5.69
Simpson	8.10	8.11	0.19
Simpson	8.22	8.52	4.63
Simpson	8.61	8.73	2.25
Simpson	8.74	8.98	4.78
Simpson	9.19	9.44	3.31
Simpson	9.78	9.82	0.45
Simpson	9.93	10.12	2.29
Simpson	10.71	10.78	0.75
Simpson	10.83	11.04	2.47
Simpson	11.08	11.36	3.96
Simpson	11.59	11.92	4.17
Simpson	11.93	11.98	0.87
Simpson	12.17	12.53	3.90
Simpson	12.79	13.02	4.67
Simpson	13.44	13.62	2.65
Simpson	14.06	14.80	11.57
Simpson	14.96	15.27	3.33
Simpson	15.44	15.57	1.99
Simpson	15.71	15.97	3.70
Simpson	16.00	16.21	1.53
Simpson	16.21	16.42	4.28
Simpson	16.44	16.56	1.88
Simpson	16.90	16.96	0.75
Simpson	17.14	17.21	1.43
Simpson	17.28	17.33	0.77
Simpson	17.50	17.53	0.72
Simpson	17.53	17.59	0.93
Simpson	17.63	17.68	0.83

APPENDIX F
Extensive Forested Tracts Along the Proposed Southeast Expansion Project

County/Parish	Begin MP	End MP	Acres
Simpson	17.68	17.82	1.68
Simpson	17.98	18.05	0.50
Simpson	18.06	18.10	0.26
Simpson	18.11	18.19	0.53
Simpson	18.23	18.23	0.05
Simpson	18.49	18.83	6.28
Simpson	19.87	19.91	0.73
Simpson	20.35	20.51	3.16
Simpson	20.76	21.53	15.16
Simpson	21.63	21.72	1.47
Simpson	22.09	22.14	0.93
Simpson	22.64	23.21	10.37
Simpson	23.30	23.35	0.89
Simpson	23.53	24.31	10.30
Simpson	24.64	24.78	2.45
Simpson	24.82	25.00	2.05
Simpson	25.01	25.77	9.52
Simpson	25.82	25.84	0.24
Simpson	26.24	26.33	0.78
Simpson	26.65	27.23	8.30
Simpson	29.03	29.28	5.28
Simpson	29.30	29.36	0.98
Smith	29.36	29.38	0.27
Smith	29.62	29.75	1.85
Smith	29.88	29.94	0.75
Smith	30.16	30.24	1.13
Smith	31.02	31.11	1.57
Smith	31.19	31.22	0.48
Smith	32.61	32.68	0.97
Smith	32.96	33.30	5.96
Smith	33.32	33.32	0.00
Smith	34.11	34.19	0.53
Smith	35.06	35.17	1.76
Smith	35.30	35.34	0.56
Smith	35.74	36.16	5.53
Smith	36.18	36.31	2.34
Smith	36.42	36.63	3.05
Smith	36.72	36.91	2.83
Smith	36.94	36.98	0.54
Smith	37.17	37.31	2.05

APPENDIX F
Extensive Forested Tracts Along the Proposed Southeast Expansion Project

County/Parish	Begin MP	End MP	Acres
Smith	37.97	38.07	1.12
Smith	38.14	38.18	0.74
Smith	38.23	38.32	1.48
Smith	38.60	39.48	11.67
Smith	39.49	40.63	14.67
Smith	41.97	42.04	0.88
Smith	42.13	42.43	4.95
Smith	42.45	42.58	2.07
Smith	43.58	44.16	7.37
Smith	44.17	44.34	1.77
Smith	45.08	45.10	0.27
Smith	45.13	45.30	2.08
Smith	45.31	45.35	0.32
Smith	45.51	45.65	2.34
Smith	45.68	45.72	0.55
Smith	45.87	45.87	0.04
Smith	45.98	46.19	3.47
Smith	46.21	46.55	5.35
Smith	46.69	46.98	3.49
Smith	47.08	47.76	9.57
Smith	47.78	48.32	6.57
Smith	48.35	49.01	7.89
Smith	49.43	49.52	1.59
Jasper	49.84	49.87	0.37
Jasper	50.04	50.13	1.52
Jasper	50.49	50.62	1.53
Jasper	51.10	51.25	1.84
Jasper	51.28	51.54	4.35
Jasper	51.56	51.72	3.45
Jasper	51.78	51.85	1.13
Jasper	51.94	52.55	7.36
Jasper	52.81	52.85	0.52
Jasper	53.00	53.03	0.39
Jasper	53.08	53.39	3.99
Jasper	53.44	53.60	2.27
Jasper	53.83	53.90	1.21
Jasper	54.14	54.39	4.77
Jasper	54.40	54.93	7.56
Jasper	54.98	54.98	0.05
Jasper	55.40	55.68	4.31

APPENDIX F
Extensive Forested Tracts Along the Proposed Southeast Expansion Project

County/Parish	Begin MP	End MP	Acres
Jasper	55.74	56.41	8.07
Jasper	57.41	58.35	12.46
Jasper	61.43	62.10	9.64
Jasper	62.13	62.82	9.83
Jasper	62.90	63.50	9.63
Jasper	64.03	64.72	8.78
Jasper	64.73	64.95	3.07
Jasper	65.52	65.62	1.64
Jasper	65.63	65.76	1.64
Jasper	65.91	66.25	5.15
Jasper	66.97	67.23	3.57
Jasper	67.28	67.45	2.86
Jasper	67.78	68.77	13.67
Jasper	68.78	69.04	3.52
Jasper	69.32	69.38	0.39
Jasper	69.46	70.10	6.77
Jasper	70.20	70.40	3.22
Jasper	70.42	70.43	0.15
Jasper	70.44	70.51	1.14
Jasper	70.67	70.75	1.27
Jasper	71.77	72.07	4.88
Jasper	72.07	72.41	4.89
Jasper	72.44	73.00	7.95
Jasper	73.30	73.44	1.73
Jasper	73.48	73.54	1.05
Jasper	73.66	73.76	1.32
Jasper	74.16	74.38	2.94
Jasper	74.47	74.74	3.73
Jasper	74.77	74.86	1.72
Jasper	75.00	75.09	1.47
Jasper	75.18	75.38	3.29
Jasper	75.39	75.54	3.36
Clarke	75.54	75.61	1.32
Clarke	75.73	76.03	4.14
Clarke	76.04	76.30	5.26
Clarke	76.45	76.92	5.44
Clarke	76.94	77.02	1.90
Clarke	77.05	77.31	5.49
Clarke	77.32	77.33	0.35
Clarke	77.65	77.88	4.59

APPENDIX F
Extensive Forested Tracts Along the Proposed Southeast Expansion Project

County/Parish	Begin MP	End MP	Acres
Clarke	77.89	78.26	6.15
Clarke	78.86	79.00	1.81
Clarke	82.98	83.15	2.76
Clarke	83.79	83.92	2.54
Clarke	83.95	84.24	4.89
Clarke	84.28	84.35	0.93
Clarke	84.59	84.78	2.93
Clarke	86.02	86.23	2.75
Clarke	86.31	86.47	2.30
Clarke	87.62	87.82	3.68
Clarke	88.10	88.20	1.54
Clarke	88.22	88.35	2.50
Clarke	88.43	88.46	0.99
Clarke	88.78	88.92	1.83
Clarke	88.98	89.04	0.88
Clarke	89.80	90.01	3.28
Clarke	90.57	90.64	0.83
Clarke	91.07	91.19	1.97
Clarke	91.60	91.62	0.24
Clarke	91.67	91.75	1.23
Clarke	93.01	93.31	3.69
Clarke	93.54	94.08	9.50
Clarke	95.21	95.34	1.76
Clarke	95.36	95.67	5.32
Clarke	97.01	97.04	0.50
Clarke	98.71	98.81	1.97
Clarke	99.23	99.39	3.60
Clarke	100.46	100.62	1.23
Clarke	100.65	100.66	0.84
Clarke	101.07	101.21	2.52
Clarke	101.47	101.55	1.48
Clarke	101.56	101.61	0.68
Clarke	101.62	101.70	1.39
Clarke	101.81	101.92	1.88
Clarke	101.94	102.01	1.13
Clarke	102.91	102.92	0.09
Clarke	102.93	103.08	2.47

APPENDIX G

Appendix G-1	Extra Workspace Areas for the Proposed Southeast Expansion Project
Appendix G-2	New and Modified Access Roads for the Proposed Southeast Expansion Project
Appendix G-3	Existing Road Crossings for the Proposed Southeast Expansion Project
Appendix G-4	Pipe Storage and Contractor Yards for the Proposed Southeast Expansion Project

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
Simpson County, Mississippi						
0.1	Side Hill Slope	Private	50	680	0.78	Potential Cut and Fill Situation to Accommodate Construction
0.5	Dirt Road	Private	50	200	0.23	Spoil Storage for Road Crossing
0.6	Stream 1	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
0.7	Stream 1	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
0.8	Twin Lakes Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
0.8	Twin Lakes Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
0.9	Side Hill Slope	Private	45	885	0.91	Potential Cut and Fill Situation to Accommodate Construction
1.3	Highway 469	State	50	200	0.23	Spoil Storage for Road Crossing
1.6	Stream 2	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
1.8	Stream 3	State	50	150	0.17	Spoil Storage and Creek Crossing Excavation
1.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
1.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
2.2	Limestone Creek	Private	50	200	0.23	Spoil Storage and Creek Crossing Excavation
2.3	Limestone Creek	Private	50	200	0.23	Spoil Storage and Creek Crossing Excavation
2.5	Rexford Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
2.5	Rexford Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
2.9	Creek	State	50	250	0.29	Spoil Storage and Creek Crossing Excavation
3.2	Side Hill Slope	Private	50	1,710	1.96	Potential Cut and Fill Situation to Accommodate Construction
3.5	Side Hill Slope	Private	50	1,020	1.17	Potential Cut and Fill Situation to Accommodate Construction
3.6	Rexford Road	Simpson	50	90	0.10	Spoil Storage for Road Crossing
3.6	Rexford Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
3.8	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
3.8	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
3.9	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
4.0	Side Hill Slope	Simpson	45	230	0.24	Potential Cut and Fill Situation to Accommodate Construction
4.0	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
4.1	Side Hill Slope	Private	45	135	0.14	Potential Cut and Fill Situation to Accommodate Construction
4.1	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
4.1	Side Hill Slope	Private	45	290	0.30	Potential Cut and Fill Situation to Accommodate Construction
4.2	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
4.2	Side Hill Slope	Private	45	55	0.06	Potential Cut and Fill Situation to Accommodate Construction
4.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
4.3	Side Hill Slope	Private	45	220	0.23	Potential Cut and Fill Situation to Accommodate Construction
4.3	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
4.3	Side Hill Slope	Private	45	90	0.09	Potential Cut and Fill Situation to Accommodate Construction
4.4	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
4.6	Side Hill Slope	Private	45	2,350	2.43	Potential Cut and Fill Situation to Accommodate Construction
4.8	Braswell Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
4.9	Braswell Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
5.1	Stream 4	State	45	200	0.21	Spoil Storage and Creek Crossing Excavation
5.1	Stream 4	State	50	170	0.20	Spoil Storage and Creek Crossing Excavation
5.2	Stream 5	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
5.5	Big Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
5.5	Star Braxton	Simpson	50	200	0.23	Spoil Storage for Road Crossing
5.6	Star Braxton	Simpson	50	200	0.23	Spoil Storage for Road Crossing
5.6	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
5.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
5.9	Creek	State	50	260	0.30	Spoil Storage and Creek Crossing Excavation
6.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
6.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
6.3	Stream 6	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
6.3	Side Hill Slope	Private	45	135	0.14	Potential Cut and Fill Situation to Accommodate Construction
6.4	Side Hill Slope	Private	45	1,158	1.20	Potential Cut and Fill Situation to Accommodate Construction
6.6	Boggs Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
6.6	Boggs Road	Simpson	50	100	0.11	Spoil Storage for Road Crossing
6.7	Side Hill Slope	Private	50	200	0.23	Potential Cut and Fill Situation to Accommodate Construction
6.8	Side Hill Slope	Private	45	1,090	1.13	Potential Cut and Fill Situation to Accommodate Construction
6.8	Stream 7	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
6.9	Stream 7	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
7.1	Stream 8	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
7.2	Stream 8	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
7.4	Wetland Crossing	Private	50	200	0.23	Spoil Storage for Wetland Crossing
7.6	Wetland Crossing	Private	50	200	0.23	Spoil Storage for Wetland Crossing
7.7	Johnson Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
7.7	Johnson Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
7.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
8.0	Creek	State	50	150	0.17	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
8.0	Holly Grove Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
8.1	Holly Grove Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
8.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
8.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
8.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
8.7	Side Hill Slope	Private	50	1,470	1.69	Potential Cut and Fill Situation to Accommodate Construction
8.8	Bynum Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
8.9	Bynum Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
9.1	Thomas Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
9.2	Thomas Road	Simpson	50	155	0.18	Spoil Storage for Road Crossing
9.2	Harrisville Braxton Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
9.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
10.1	Wetland Crossing	Private	50	200	0.23	Spoil Storage for Wetland Crossing
10.2	Ash Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
10.2	Ash Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
10.4	Sanders Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
10.5	Sanders Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
10.6	Illinois Central RR	Private	50	300	0.34	Ditch Spoil Storage for Bore Pit
11.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
11.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
11.6	Gum Springs Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
11.6	Gum Springs Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
11.9	Highway 149	State	50	200	0.23	Spoil Storage for Road Crossing
12.0	Highway 149	State	50	200	0.23	Spoil Storage for Road Crossing
12.2	Sawmill Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
12.2	Sawmill Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
12.3	HDD Highway 49	US	100	200	0.46	HDD Hwy 49 and Dabbs Creek
12.8	HDD Highway 49	US	95	410	0.89	HDD Hwy 49 and Dabbs Creek
13.0	Foreign Pipe	Private	50	200	0.23	Spoil Storage for Pipe Crossing
13.1	Foreign Pipe	Private	50	200	0.23	Spoil Storage for Pipe Crossing
13.5	Wetland Crossing	Private	50	400	0.46	Spoil Storage for Wetland Crossing Excavation
13.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
13.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
13.8	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
14.0	St. Johns Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
14.1	St. Johns Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
14.3	Indian Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
14.3	Indian Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
14.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
14.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
14.8	Cato Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
14.8	Cato Road	Simpson	50	190	0.22	Spoil Storage for Road Crossing
15.0	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
15.3	Foreign Pipeline	Simpson	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
15.5	Stream 8	State	50	400	0.46	Spoil Storage and Creek Crossing Excavation
15.8	HDD Campbells Creek	Private	120	200	0.55	HDD Campbells Creek and Campbells Creek Road
16.2	HDD Campbells Creek	Private	100	200	0.46	HDD Campbells Creek and Campbells Creek Road
16.2	Field Road	Private	50	160	0.18	Spoil Storage for Road Crossing
16.3	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
16.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
16.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
17.2	Stream 9	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
17.2	Stream 9	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
17.5	Strong River Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
17.5	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Creek Crossing Excavation
17.7	Wetland Crossing	Private	50	100	0	Spoil Storage and 5 Crossing Excavation
17.7	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
17.9	HDD Strong River	Private	95	200	0.44	HDD Strong River and Highway #13
18.3	HDD Strong River	Private	100	200	0.46	HDD Strong River and Highway #13
18.4	Wetland Crossing	Private	50	200	0.23	Spoil Storage for Wetland Crossing
18.6	Stream 11	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
18.6	Stream 11	State	50	300	0.34	Spoil Storage and Creek Crossing Excavation
18.7	Stream 12	State	50	270	0.31	Spoil Storage and Creek Crossing Excavation
18.8	Field Road	Private	50	200	0.23	Spoil Storage and Creek Crossing Excavation
18.9	Wetland Crossing	Private	50	400	0.46	Spoil Storage and Wetland Crossing Excavation
19.5	Foreign Pipeline	Private	50	170	0.20	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
19.7	Ponder Mason Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
19.7	Ponder Mason Road	Simpson	45	200	0.21	Spoil Storage for Road Crossing
19.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
19.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
20.3	Side Hill Slope	Private	45	890	0.92	Potential Cut and Fill Situation to Accommodate Construction
20.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
20.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
20.5	Side Hill Slope	Private	45	120	0.12	Potential Cut and Fill Situation to Accommodate Construction
20.6	Everett Church Road	Simpson	50	300	0.34	Spoil Storage for Road Crossing
20.6	Everett Church Road	Simpson	50	100	0.11	Spoil Storage for Road Crossing
20.7	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
20.8	Side Hill Slope	Private	50	2,010	2.31	Potential Cut and Fill Situation to Accommodate Construction
20.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
21.1	Creek	State	50	330	0.38	Spoil Storage and Creek Crossing Excavation
21.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
21.3	Side Hill Slope	Private	50	875	1.00	Potential Cut and Fill Situation to Accommodate Construction
21.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
21.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
21.5	Side Hill Slope	Private	50	30	0.03	Potential Cut and Fill Situation to Accommodate Construction
21.6	Shows Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
21.6	Shows Road	Simpson	50	350	0.40	Spoil Storage for Road Crossing
21.7	Crooked Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
21.8	Jones Layton Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
21.8	Jones Layton Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
21.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
22.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
22.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
22.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
22.4	Layton Jones Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
22.4	Layton Jones Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
22.5	Side Hill Slope	Private	45	1,180	1.22	Potential Cut and Fill Situation to Accommodate Construction
22.6	Denbury Resources Road	Private	50	130	0.15	Spoil Storage for Road Crossing
22.7	Side Hill Slope	Private	45	220	0.23	Potential Cut and Fill Situation to Accommodate Construction
22.8	Side Hill Slope	Private	45	1,360	1.40	Potential Cut and Fill Situation to Accommodate Construction
23.0	Layton Jones Drive	Simpson	50	330	0.38	Spoil Storage for Road Crossing
23.2	Creek	Simpson	50	200	0.23	Spoil Storage for Road Crossing
23.4	St. Hwy 541	Simpson	50	200	0.23	Spoil Storage for Road Crossing
23.5	St. Hwy 541	Simpson	50	415	0.48	Spoil Storage for Road Crossing
23.5	Paved Drive Way	Private	50	75	0.09	Spoil Storage for Road Crossing

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
23.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
24.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
24.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
24.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
24.6	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
24.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
24.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
24.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
25.0	Wetland Crossing	Simpson	50	200	0.23	Spoil Storage for Wetland Crossing
25.2	Dr Magee Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
25.2	Dr Magee Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
25.8	Rocky Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
25.8	Rocky Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
26.3	Cole Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
26.3	Cole Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
26.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
26.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
26.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
26.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
27.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
27.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
27.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
27.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
27.9	Sixteen Section Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
28.0	Sixteen Section Road	Simpson	25	200	0.11	Spoil Storage for Road Crossing
28.0	Ag. Area	Private	25	480	0.28	Area Needed to Avoid Concerns
28.1	Creek	State	25	200	0.11	Spoil Storage and Creek Crossing Excavation
28.1	St. Hwy 540	Simpson	50	158	0.18	Spoil Storage for Road Crossing
28.2	St. Hwy 540	Simpson	50	200	0.23	Spoil Storage for Road Crossing
28.7	Wetland Crossing	Simpson	50	200	0.23	Spoil Storage for Wetland Crossing
29.0	Dry Creek Rd.	Simpson	50	200	0.23	Spoil Storage for Road Crossing
29.0	Dry Creek Rd.	Simpson	50	200	0.23	Spoil Storage for Road Crossing
29.2	Creek	State	50	260	0.30	Spoil Storage and Creek Crossing Excavation
29.2	Ditch	State	50	225	0.26	Spoil Storage and Ditch Crossing Excavation
29.2	Ditch	State	50	315	0.36	Spoil Storage and Ditch Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
29.3	Martin Road	Simpson	50	200	0.23	Spoil Storage for Road Crossing
29.5	Side Hill Slope	Simpson	50	1,010	1.16	Potential Cut and Fill Situation to Accommodate Construction
29.6	Creek	Simpson	50	200	0.23	Spoil Storage for Creek Crossing
		Simpson County ATWS Subtotal			**66.31**	
Smith County, Mississippi						
30.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
30.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
30.3	CR 503	Smith	50	200	0.23	Spoil Storage for Road Crossing
30.3	CR 503	Smith	50	200	0.23	Spoil Storage for Road Crossing
30.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
30.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
30.5	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
30.7	Creek	State	50	305	0.35	Spoil Storage and Creek Crossing Excavation
30.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
31.0	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
31.0	Field Road	Private	50	110	0.13	Spoil Storage and Creek Crossing Excavation
31.1	Creek	State	50	60	0.07	Spoil Storage and Creek Crossing Excavation
31.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
31.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
31.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
31.4	Private Road	Private	50	200	0.23	Spoil Storage for Road Crossing
31.4	Private Road	Private	50	200	0.23	Spoil Storage for Road Crossing
31.8	Georgia Pacific Land Road	Private	50	200	0.23	Spoil Storage for Road Crossing
31.8	Georgia Pacific Land Road	Private	50	200	0.23	Spoil Storage for Road Crossing
32.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
32.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
32.8	Green Grass	Private	50	200	0.23	Spoil Storage for Road Crossing
32.8	Green Grass	Private	50	200	0.23	Spoil Storage for Road Crossing
33.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
33.1	Creek	State	50	385	0.44	Spoil Storage and Creek Crossing Excavation
33.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
33.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
33.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
33.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
33.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
33.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
33.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
34.1	HDD Oakohay Creek	Private	100	200	0.46	HDD Oakohay Creek and Beaver Creek
34.8	HDD Oakohay Creek	Private	120	300	0.83	HDD Oakohay Creek and Beaver Creek
35.1	Wetland Crossing	Smith	50	320	0.37	Spoil Storage for Wetland HDD Crossing
35.2	CR 121 (Shopping Center)	Smith	50	200	0.23	Spoil Storage for Road Crossing
35.2	CR 121 (Shopping Center)	Smith	50	200	0.23	Spoil Storage for Road Crossing
36.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
36.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
36.2	CR 77/CR77-3	Smith	50	200	0.23	Spoil Storage for Road Crossing
36.3	CR 77/CR77-3	Smith	25	200	0.11	Spoil Storage for Road Crossing
36.3	Ag Area	Private	25	500	0.30	Area Needed to Avoid Concerns
36.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
36.8	Ely Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
36.9	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Creek Crossing Excavation
37.3	St. Hwy 35	State	50	200	0.23	Spoil Storage for Road Crossing
37.3	St. Hwy 35	State	50	200	0.23	Spoil Storage for Road Crossing
37.7	CR 35-6	Smith	50	200	0.23	Spoil Storage for Road Crossing
37.7	CR 35-6	Smith	25	200	0.11	Spoil Storage for Road Crossing
37.8	Ag Area	Private	25	1,140	0.65	Area Needed to Avoid Concerns
38.1	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
38.1	Fisher Creek	State	50	290	0.33	Spoil Storage and Creek Crossing Excavation
38.3	Fisher Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
38.6	St. Hwy 37	State	50	200	0.23	Spoil Storage for Road Crossing
38.6	St. Hwy 37	State	50	200	0.23	Spoil Storage for Road Crossing
38.7	Hot Bend	Private	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
38.9	Hot Bend	Private	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
39.1	Creek	State	50	150	0.17	Spoil Storage and Creek Crossing Excavation
39.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
39.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
39.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
39.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
39.8	Beaver Dam Creek	State	50	200	0.23	Spoil Storage for Road Crossing
39.9	Beaver Dam Creek	State	50	200	0.23	Spoil Storage for Road Crossing
40.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
40.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
40.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
40.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
40.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
40.6	Creek	State	50	180	0.21	Spoil Storage and Creek Crossing Excavation
40.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
40.9	Field Rd.	Private	50	200	0.23	Spoil Storage for Road Crossing
40.9	Field Rd.	Private	50	190	0.22	Spoil Storage for Road Crossing
41.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
41.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
41.3	Creek	State	50	325	0.37	Spoil Storage and Creek Crossing Excavation
41.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
41.6	CR 93	Smith	50	200	0.23	Spoil Storage for Road Crossing
41.6	CR 93	Smith	50	200	0.23	Spoil Storage for Road Crossing
42.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
42.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
42.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
42.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
42.6	CR 84	Smith	50	200	0.23	Spoil Storage for Road Crossing
42.6	CR 84	Smith	50	200	0.23	Spoil Storage for Road Crossing
42.8	CR 19	Smith	50	200	0.23	Spoil Storage for Road Crossing
42.8	CR 19	Smith	50	200	0.23	Spoil Storage for Road Crossing
43.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
43.2	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
43.5	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
44.0	Field Road and Hot Bend	Private	50	320	0.37	Work Area Necessary to Accommodate Pipeline Alignment Modification
44.1	HDD Leaf River	Private	100	300	0.69	HDD Leaf River
44.4	HDD Leaf River	Private	100	300	0.69	HDD Leaf River
44.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
44.8	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
44.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
44.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
45.0	Pipeline Corridor and Road	Private	50	200	0.23	Spoil Storage for Road Crossing
45.1	Pipeline Corridor and Road	Private	50	200	0.23	Spoil Storage for Road Crossing
45.2	HDD Tallahala Creek	Private	100	200	0.46	HDD Tallahala Creek

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
45.5	HDD Tallahala Creek	Private	100	200	0.46	HDD Tallahala Creek
45.5	HDD Tallahala Creek	Private	70	150	0.24	HDD Tallahala Creek and Foreign Pipeline Crossing Excavation
45.6	CR 99	Smith	50	200	0.23	Spoil Storage for Road Crossing
45.7	Creek	State	50	200	0.23	Spoil Storage for Creek Crossing
45.8	Creek	State	50	200	0.23	Spoil Storage for Creek Crossing
46.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
46.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
46.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
46.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
46.8	Hot Bend	Private	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
46.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
46.9	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
47.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
47.3	Creek	State	50	400	0.46	Spoil Storage and Creek Crossing Excavation and Pipeline Alignment Modification
47.8	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Creek Crossing Excavation
48.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
48.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
48.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
48.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
49.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
49.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
49.3	St. Hwy 531	State	50	300	0.34	Spoil Storage for Road Crossing
49.3	St. Hwy 531	State	50	230	0.26	Spoil Storage for Road Crossing
49.3	St. Hwy 531	State	50	200	0.23	Spoil Storage for Road Crossing
	Smith County ATWS Subtotal				**31.86**	
Jasper County, Mississippi						
49.5	Hot Bend and Flip W.S.	Private	50	260	0.30	Work Area Necessary to Accommodate Pipeline Alignment Modification
49.5	Hot Bend and Flip W.S.	Private	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
50.1	CR 9	Jasper	50	200	0.23	Spoil Storage for Road Crossing
50.1	CR 9	Jasper	50	200	0.23	Spoil Storage for Road Crossing
50.2	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
50.3	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
50.3	Ditch	State	70	200	0.34	Spoil Storage and Creek Crossing Excavation
50.7	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
51.3	Hot Bend and Flip W.S.	Private	50	300	0.34	Work Area Necessary to Accommodate Pipeline Alignment Modification
51.3	Hot Bend and Flip W.S.	Private	50	300	0.34	Work Area Necessary to Accommodate Pipeline Alignment Modification
51.5	St. Hwy 15	State	50	200	0.23	Spoil Storage for Road Crossing
51.6	St. Hwy 15	State	50	120	0.14	Spoil Storage for Road Crossing
51.6	Creek	State	50	310	0.36	Spoil Storage and Creek Crossing Excavation
51.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
51.8	Abandoned RR	Private	50	180	0.21	Ditch Spoil Storage for Bore Pit
51.9	Abandoned RR	Private	50	200	0.23	Ditch Spoil Storage for Bore Pit
51.9	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
52.6	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
52.9	CR 17	Jasper	50	200	0.23	Spoil Storage for Road Crossing
52.9	CR 17	Jasper	25	200	0.11	Spoil Storage for Road Crossing
52.9	Ag Area	Private	25	290	0.17	Area Needed to Avoid Concerns
53.4	Creek	State	50	200	0.23	Spoil Storage and Pond Crossing Excavation
53.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
53.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
53.8	CR 5282	Jasper	50	200	0.23	Spoil Storage for Road Crossing
53.8	CR 5282	Jasper	50	200	0.23	Spoil Storage for Road Crossing
54.1	CR 1725	Jasper	50	200	0.23	Spoil Storage for Road Crossing
54.1	CR 1725	Jasper	50	200	0.23	Spoil Storage for Road Crossing
54.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
54.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
54.4	CR 1725	Jasper	50	140	0.16	Spoil Storage for Road Crossing
54.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
54.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
54.9	Creek	State	50	125	0.14	Spoil Storage and Creek Crossing Excavation
54.9	Creek	State	50	65	0.07	Spoil Storage and Creek Crossing Excavation
55.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
55.1	Field Road	Private	50	45	0.05	Spoil Storage for Road Crossing
55.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
55.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
55.7	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
55.7	HDD Tallahoma Creek	State	120	200	0.55	HDD Tallahoma Creek
56.2	HDD Tallahoma Creek	State	120	200	0.55	HDD Tallahoma Creek
56.4	Wetland Crossing	Private	50	400	0.46	Spoil Storage and Wetland Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
56.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
56.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
57.3	CR 23	Jasper	50	200	0.23	Spoil Storage for Road Crossing
57.4	CR 23	Jasper	50	200	0.23	Spoil Storage for Road Crossing
57.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
57.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
58.2	CR 2337	Jasper	50	200	0.23	Spoil Storage for Road Crossing
58.2	CR 2337	Jasper	50	200	0.23	Spoil Storage for Road Crossing
58.3	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
58.6	Hot Bend	Private	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
58.7	Field Road	Jasper	50	200	0.23	Spoil Storage for Road Crossing
58.7	Field Road	Jasper	50	200	0.23	Spoil Storage for Road Crossing
59.1	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
59.7	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
59.7	Private Road	Private	50	65	0.07	Spoil Storage for Road Crossing
59.7	Private Road	Private	50	200	0.23	Spoil Storage for Road Crossing
59.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
60.1	CR 2333	Jasper	50	360	0.41	Spoil Storage for Road Crossing
60.1	CR 2333	Jasper	50	200	0.23	Spoil Storage for Road Crossing
60.6	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
60.6	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
60.6	Creek	State	50	370	0.42	Spoil Storage and Creek Crossing Excavation
60.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
60.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
61.1	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
61.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
61.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
61.2	Creek	State	70	200	0.34	Spoil Storage and Creek Crossing Excavation
61.4	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
61.4	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
61.5	Field Road	Jasper	50	200	0.23	Spoil Storage for Road Crossing
61.5	Field Road	Jasper	50	200	0.23	Spoil Storage for Road Crossing
62.1	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
62.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
62.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
62.4	HDD Tallahala Creek	Private	100	200	0.46	HDD Tallahala Creek
62.7	HDD Tallahala Creek	Private	100	200	0.46	HDD Tallahala Creek
62.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
62.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
63.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
63.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
63.3	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
63.3	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
63.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
63.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
63.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
63.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
64.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
64.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
64.7	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
64.9	CR 31	Jasper	50	200	0.23	Spoil Storage for Road Crossing
65.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
65.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
65.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
65.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
65.6	CR 52824	Jasper	50	200	0.23	Spoil Storage for Road Crossing
65.6	CR 52824	Jasper	50	200	0.23	Spoil Storage for Road Crossing
65.8	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
65.9	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
66.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
66.2	Creek	State	50	75	0.09	Spoil Storage and Creek Crossing Excavation
66.2	Creek	State	50	175	0.20	Spoil Storage and Creek Crossing Excavation
66.3	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
66.4	CR 52830	Jasper	50	200	0.23	Spoil Storage for Road Crossing
66.4	CR 52830	Jasper	50	200	0.23	Spoil Storage for Road Crossing
66.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
66.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
67.0	Wetland Crossing	Private	50	400	0.46	Spoil Storage and Wetland Crossing Excavation
67.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
67.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
67.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
67.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
67.8	Creek	State	50	350	0.40	Spoil Storage and Creek Crossing Excavation
68.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
68.3	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
68.3	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
68.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
68.8	St. Hwy 528	Jasper	50	200	0.23	Spoil Storage for Road Crossing
69.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
69.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
69.3	HDD Interstate 59	Private	100	200	0.46	HDD Interstate 59
69.6	HDD Interstate 59	Private	100	200	0.46	HDD Interstate 59
69.9	Field Road	Private	50	300	0.34	Spoil Storage for Road Crossing
70.0	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
70.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
70.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
70.4	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
70.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
70.5	CR 35	Jasper	50	200	0.23	Spoil Storage for Road Crossing
70.6	CR 35	Jasper	50	200	0.23	Spoil Storage for Road Crossing
70.7	CR 8	Jasper	50	200	0.23	Spoil Storage for Road Crossing
70.7	CR 8	Jasper	50	200	0.23	Spoil Storage for Road Crossing
70.9	CR 828	Jasper	50	200	0.23	Spoil Storage for Road Crossing
70.9	CR 828	Jasper	50	200	0.23	Spoil Storage for Road Crossing
70.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
71.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
71.4	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
71.4	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
71.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
71.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
71.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
71.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
72.1	Southern Railway	Private	50	200	0.23	Ditch Spoil Storage for Bore Pit
72.1	Southern Railway	Private	50	200	0.23	Ditch Spoil Storage for Bore Pit
72.4	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
72.5	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
72.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
72.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
73.6	CR 115	Jasper	50	200	0.23	Spoil Storage for Road Crossing
73.6	CR 115	Jasper	50	200	0.23	Spoil Storage for Road Crossing
73.8	Hot Bend	Private	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
73.9	US Hwy 11	Federal	50	200	0.23	Spoil Storage for Road Crossing
73.9	US Hwy 11	Federal	50	200	0.23	Spoil Storage for Road Crossing
74.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
74.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
74.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
74.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
74.7	Foreign Pipeline and Crossover	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
74.7	Foreign Pipeline and Crossover	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
74.8	Foreign Pipeline and Crossover	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
74.9	CR 64	Jasper	50	200	0.23	Spoil Storage for Road Crossing
75.0	CR 64	Jasper	50	200	0.23	Spoil Storage for Road Crossing
75.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
75.1	Field Road	Private	25	200	0.11	Spoil Storage for Road Crossing
75.1	Field Road	Private	25	200	0.11	Spoil Storage for Road Crossing
75.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
75.4	CR 39	Jasper	50	200	0.23	Spoil Storage for Road Crossing
75.4	CR 39	Jasper	50	200	0.23	Spoil Storage for Road Crossing
75.5	Side Hill Slope	Private	50	970	1.11	Potential Cut and Fill Situation to Accommodate Construction
	Jasper County ATWS Subtotal				**42.39**	
Clarke County, Mississippi						
76.0	CR 235	Clarke	50	200	0.23	Spoil Storage for Road Crossing
76.1	CR 235	Clarke	50	200	0.23	Spoil Storage for Road Crossing
76.1	CR 235	Clarke	95	200	0.45	Spoil Storage for Road Crossing
76.1	CR 235	Clarke	25	200	0.13	Spoil Storage for Road Crossing
76.1	Cross Over	Private	50	590	0.68	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
76.1	Cross Over	Private	45	350	0.36	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
76.4	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
76.9	CR 2301	Clarke	50	200	0.23	Spoil Storage for Road Crossing
77.0	CR 2301	Clarke	50	350	0.40	Spoil Storage for Road Crossing
77.1	Foreign Pipeline and Crossover	Private	50	300	0.34	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
77.2	Side Hill Slope	Private	50	950	1.09	Potential Cut and Fill Situation to Accommodate Construction
77.3	Foreign Pipeline and Crossover	Private	50	85	0.10	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
77.3	Foreign Pipeline and Crossover	Private	50	500	0.57	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
77.5	Side Hill Slope	Private	50	2,300	2.64	Potential Cut and Fill Situation to Accommodate Construction
77.9	CR 240	Clarke	50	200	0.23	Spoil Storage for Road Crossing
78.0	Side Hill Slope	Private	50	540	0.62	Potential Cut and Fill Situation to Accommodate Construction
78.3	Creek	State	50	320	0.37	Spoil Storage and Creek Crossing Excavation
78.3	Foreign Pipeline	Private	50	200	0	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
78.4	Foreign Pipeline	Private	50	160	0.18	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
78.4	Side Hill Slope	Private	50	390	0.45	Potential Cut and Fill Situation to Accommodate Construction
78.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
78.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
78.6	Foreign Pipeline	Private	50	220	0.25	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
78.7	Foreign Pipeline	Private	50	400	0.46	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
78.8	Field Road	Private	50	620	0.71	Spoil Storage for Road Crossing
79.0	CR 216	Clarke	50	200	0.23	Spoil Storage for Road Crossing
79.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
79.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
79.7	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
80.3	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
80.3	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
81.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
81.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
81.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
82.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
82.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
82.1	Field Road	Private	50	160	0.18	Spoil Storage for Road Crossing
82.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
82.2	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
82.4	HDD Shubuta Creek	Private	100	200	0.46	HDD Shubuta Creek
82.9	HDD Shubuta Creek	Private	100	200	0.46	HDD Shubuta Creek
83.2	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
83.4	CR 250	Clarke	50	200	0.23	Spoil Storage for Road Crossing
83.4	CR 250	Clarke	50	200	0.23	Spoil Storage for Road Crossing
83.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
83.7	Hot Bend	State	50	200	0.23	Work Area Necessary to Accommodate Pipeline Alignment Modification
83.7	CR 270	Clarke	50	200	0.23	Spoil Storage for Road Crossing
83.8	CR 270	Clarke	50	200	0.23	Spoil Storage for Road Crossing
83.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
84.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
84.1	CR 2702	Clarke	50	200	0.23	Spoil Storage for Road Crossing
84.1	CR 2702	Clarke	50	200	0.23	Spoil Storage for Road Crossing
84.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
84.7	Creek	State	50	125	0.14	Spoil Storage and Creek Crossing Excavation
84.8	Bogue Homa Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
85.1	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
85.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
85.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
85.4	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
85.4	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
85.6	Wetland Crossing	State	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
85.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
85.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
85.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
86.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
86.8	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
86.8	Field Road	Private	50	335	0.38	Spoil Storage for Road Crossing
86.9	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
87.2	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
87.2	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
87.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
87.6	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
87.6	HDD U.S. Hwy 45	Private	80	160	0.29	HDD U.S. Hwy 45

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
88.0	U.S. Hwy 45	Clarke	100	200	0.46	HDD U.S. Hwy 45
88.2	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
88.5	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
88.9	HDD Chickasawhay River	Private	100	200	0.46	HDD Chickasawhay River
89.4	HDD Chickasawhay River	Private	100	200	0.46	HDD Chickasawhay River
89.4	HDD Chickasawhay River	Private	50	200	0.23	HDD Chickasawhay River
89.5	Foreign Pipeline and Crossover	Private	50	300	0.34	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
89.6	Foreign Pipeline and Crossover	Private	50	300	0.34	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
89.8	Ditch	State	50	200	0.23	Spoil Storage and Ditch Crossing Excavation
89.9	Ditch	State	50	200	0.23	Spoil Storage and Ditch Crossing Excavation
90.6	CR 695	Clarke	50	200	0.23	Spoil Storage for Road Crossing
90.9	Side Hill Slope	Private	50	1,735	1.99	Potential Cut and Fill Situation to Accommodate Construction
91.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
91.3	Side Hill Slope	Private	50	560	0.64	Potential Cut and Fill Situation to Accommodate Construction
91.3	CR 694	Clarke	50	200	0.23	Spoil Storage for Road Crossing
91.3	CR 694	Clarke	50	200	0.23	Spoil Storage for Road Crossing
91.4	Side Hill Slope	Private	50	675	0.77	Potential Cut and Fill Situation to Accommodate Construction
91.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
91.6	Creek	State	50	80	0.09	Spoil Storage and Creek Crossing Excavation
91.8	Side Hill Slope	Private	50	1995	2.29	Potential Cut and Fill Situation to Accommodate Construction
92.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
92.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
92.2	Side Hill Slope	Private	50	560	0.64	Potential Cut and Fill Situation to Accommodate Construction
92.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
92.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
92.4	Side Hill Slope	Private	50	690	0.79	Potential Cut and Fill Situation to Accommodate Construction
92.6	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
92.9	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
93.0	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
93.4	CR 680	Clarke	50	200	0.23	Spoil Storage for Road Crossing
93.4	CR 680	Clarke	50	190	0.22	Spoil Storage for Road Crossing
93.5	Side Hill Slope	Private	50	170	0.20	Potential Cut and Fill Situation to Accommodate Construction
93.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
93.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
93.8	Side Hill Slope	Private	50	260	0.30	Potential Cut and Fill Situation to Accommodate Construction
93.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
93.9	Creek	State	50	390	0.45	Spoil Storage and Creek Crossing Excavation
94.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
94.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
94.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
94.7	HDD Residential	Private	100	200	0.46	HDD Residential
95.1	HDD Residential	Private	100	200	0.46	HDD Residential
95.2	CR 630	Clarke	50	200	0.23	Spoil Storage for Road Crossing
95.2	CR 630	Clarke	50	200	0.23	Spoil Storage for Road Crossing
95.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
95.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
95.7	Side Hill Slope	Private	50	2,390	2.74	Potential Cut and Fill Situation to Accommodate Construction
96.0	Foreign Pipeline	Private	50	135	0.15	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
96.0	Foreign Pipeline	Private	50	200	0.23	Spoil Storage of Excess Soil to Accommodate Depth to Avoid Existing Pipeline
96.2	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
96.2	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
96.7	Side Hill Slope	Private	50	1,560	1.79	Potential Cut and Fill Situation to Accommodate Construction
96.9	Side Hill Slope	Private	50	590	0.68	Potential Cut and Fill Situation to Accommodate Construction
96.9	Wetland Crossing	State	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
97.1	Wetland Crossing	State	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
97.1	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
97.2	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
97.6	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
97.7	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
98.0	CR 665	Clarke	50	200	0.23	Spoil Storage for Road Crossing
98.1	CR 665	Clarke	50	200	0.23	Spoil Storage for Road Crossing
98.1	Side Hill Slope	Private	50	275	0.32	Potential Cut and Fill Situation to Accommodate Construction
98.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
98.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
98.3	Side Hill Slope	Private	50	265	0.30	Potential Cut and Fill Situation to Accommodate Construction
98.3	Field Road	Clarke	50	200	0.23	Spoil Storage for Road Crossing
98.4	Field Road	Clarke	50	200	0.23	Spoil Storage for Road Crossing
98.4	Side Hill Slope	Private	50	165	0.19	Potential Cut and Fill Situation to Accommodate Construction

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
98.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
98.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
98.6	Side Hill Slope	Private	50	380	0.44	Potential Cut and Fill Situation to Accommodate Construction
98.7	Creek	State	50	270	0.31	Spoil Storage and Creek Crossing Excavation
98.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
98.8	Side Hill Slope	Private	50	460	0.53	Potential Cut and Fill Situation to Accommodate Construction
98.9	St. Hwy 511	State	50	200	0.23	Spoil Storage for Road Crossing
98.9	St. Hwy 511	State	50	200	0.23	Spoil Storage for Road Crossing
99.1	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
99.3	Side Hill Slope	Private	50	1,110	1.27	Potential Cut and Fill Situation to Accommodate Construction
99.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
99.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
99.7	Side Hill Slope	Private	50	1,870	2.15	Potential Cut and Fill Situation to Accommodate Construction
99.8	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
99.9	Field Road	Private	75	200	0.34	Spoil Storage for Road Crossing
100.3	HDD Buckatunna Creek	Private	100	200	0.46	HDD Buckatunna Creek
100.6	HDD Buckatunna Creek	Private	100	200	0.46	HDD Buckatunna Creek
100.7	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
100.7	Parallel Road	Private	50	195	0.22	Spoil Storage for Road Crossing
100.8	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
100.8	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
100.9	Side Hill Slope	Private	50	420	0.48	Potential Cut and Fill Situation to Accommodate Construction
100.9	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
101.0	Field Road	Private	50	400	0.46	Spoil Storage for Road Crossing
101.3	Creeks	State	50	400	0.46	Spoil Storage and Creek Crossing Excavation
101.6	CR 650	Clarke	50	200	0.23	Spoil Storage for Road Crossing
101.6	CR 650	Clarke	50	200	0.23	Spoil Storage for Road Crossing
101.7	Ditch	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
101.8	CR 657	Clarke	50	200	0.23	Spoil Storage for Road Crossing
101.8	CR 657	Clarke	50	200	0.23	Spoil Storage for Road Crossing
101.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
101.9	Creek	State	50	100	0.11	Spoil Storage and Creek Crossing Excavation
102.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
102.2	Side Hill Slope	Private	50	260	0.30	Potential Cut and Fill Situation to Accommodate Construction
102.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
102.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
102.6	Side Hill Slope	Private	50	1,825	2.09	Potential Cut and Fill Situation to Accommodate Construction
102.8	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
102.9	CR 643	Clarke	50	80	0.09	Spoil Storage for Road Crossing
102.9	CR 643	Clarke	50	200	0.23	Spoil Storage for Road Crossing
103.1	Private Road	Private	50	200	0.23	Spoil Storage for Road Crossing
103.1	Private Road	Private	50	200	0.23	Spoil Storage for Road Crossing
103.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
103.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
103.4	Side Hill Slope	Private	50	220	0.25	Potential Cut and Fill Situation to Accommodate Construction
103.6	Side Hill Slope	Private	50	1,060	1.22	Potential Cut and Fill Situation to Accommodate Construction
103.8	Side Hill Slope	Private	50	910	1.04	Potential Cut and Fill Situation to Accommodate Construction
104.0	Side Hill Slope	Private	50	550	0.63	Potential Cut and Fill Situation to Accommodate Construction
104.2	Side Hill Slope	Private	50	380	0.44	Potential Cut and Fill Situation to Accommodate Construction
104.3	CR 411	Clarke	50	200	0.23	Spoil Storage for Road Crossing
104.3	CR 411	Clarke	50	200	0.23	Spoil Storage for Road Crossing
104.4	Side Hill Slope	Private	50	530	0.61	Potential Cut and Fill Situation to Accommodate Construction
	Clarke County ATWS Subtotal				**71.66**	
Choctaw County, Alabama						
104.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
104.5	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
104.6	Side Hill Slope	Private	50	540	0.62	Potential Cut and Fill Situation to Accommodate Construction
104.7	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
104.7	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
104.8	Side Hill Slope	Private	50	260	0.30	Potential Cut and Fill Situation to Accommodate Construction
104.9	Side Hill Slope	Private	50	420	0.48	Potential Cut and Fill Situation to Accommodate Construction
105.1	Private Road	Private	50	110	0.13	Spoil Storage for Road Crossing
105.1	Private Road	Private	50	200	0.23	Spoil Storage for Road Crossing
105.1	Side Hill Slope	Private	50	160	0.18	Potential Cut and Fill Situation to Accommodate Construction
105.2	CR 410	Choctaw	50	200	0.23	Spoil Storage for Road Crossing
105.2	CR 410	Choctaw	50	200	0.23	Spoil Storage for Road Crossing
105.3	Side Hill Slope	Private	50	95	0.10	Potential Cut and Fill Situation to Accommodate Construction
105.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
105.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
105.4	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
105.5	Side Hill Slope	Private	50	1,035	1.19	Potential Cut and Fill Situation to Accommodate Construction
105.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
105.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
106.0	Side Hill Slope	Private	50	1,560	1.79	Potential Cut and Fill Situation to Accommodate Construction
106.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
106.3	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
106.6	Side Hill Slope	Private	50	2,570	2.95	Potential Cut and Fill Situation to Accommodate Construction
106.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
106.8	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
107.0	Side Hill Slope	Private	50	1,090	1.25	Potential Cut and Fill Situation to Accommodate Construction
107.1	HDD Okatuppa Creek	Private	100	200	0.46	HDD Okatuppa Creek
107.4	HDD Okatuppa Creek	Private	95	300	0.65	HDD Okatuppa Creek
107.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
107.6	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
107.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
108.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
108.2	Field Road/Foreign Pipeline	Private	50	200	0.23	Spoil Storage for Road Crossing
108.2	Field Road/Foreign Pipeline	Private	50	200	0.23	Spoil Storage for Road Crossing
108.3	Side Hill Slope	Private	50	425	0.49	Potential Cut and Fill Situation to Accommodate Construction
108.3	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
108.4	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
108.4	Side Hill Slope	Private	50	60	0.07	Potential Cut and Fill Situation to Accommodate Construction
108.4	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
108.5	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
108.6	Side Hill Slope	Private	50	1,290	1.48	Potential Cut and Fill Situation to Accommodate Construction
108.8	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
108.8	Field Road	Private	50	200	0.23	Spoil Storage for Road Crossing
108.9	Side Hill Slope	Private	50	660	0.76	Potential Cut and Fill Situation to Accommodate Construction
109.0	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
109.0	Creek	State	50	70	0.08	Spoil Storage and Creek Crossing Excavation
109.2	Side Hill Slope	Private	50	395	0.45	Potential Cut and Fill Situation to Accommodate Construction
109.3	Ditch	State	50	200	0.23	Spoil Storage and Ditch/Wetlands Crossing Excavation
109.4	Side Hill Slope	Private	50	510	0.58	Potential Cut and Fill Situation to Accommodate Construction
109.4	CR 9	Choctaw	50	200	0.23	Spoil Storage for Road Crossing
109.5	CR 9	Choctaw	50	470	0.54	Spoil Storage for Road Crossing

TABLE G-1
Extra Workspace Areas for the Proposed Southeast Expansion Project

MP	Location/Reason for ATWS	Ownership	Width	Length	Acres	Reason for ATWS
109.7	Side Hill Slope	Private	50	360	0.41	Potential Cut and Fill Situation to Accommodate Construction
109.8	Side Hill Slope	Private	50	200	0.23	Potential Cut and Fill Situation to Accommodate Construction
109.8	Side Hill Slope	Private	50	760	0.87	Potential Cut and Fill Situation to Accommodate Construction
109.9	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
110.1	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
110.2	Side Hill Slope	Private	50	325	0.37	Potential Cut and Fill Situation to Accommodate Construction
110.2	Creek	State	50	200	0.23	Spoil Storage and Creek Crossing Excavation
110.3	Creek	State	50	65	0.07	Spoil Storage and Creek Crossing Excavation
110.4	Wetland Crossing	Private	50	200	0.23	Spoil Storage and Wetland Crossing Excavation
110.6	Side Hill Slope	Private	50	2,010	2.31	Potential Cut and Fill Situation to Accommodate Construction
	Choctaw County ATWS Subtotal				**26.86**	
	Total ATWS				**239.08**	

TABLE G-2
New and Modified Access Roads for the Proposed Southeast Expansion Project

MP	Feature ID	Ownership	County	Length x Width (ft)	Existing Road Type	Temporary/ Permanent Use	New/ Existing	Modification	Modification (acres) Temp/Perm
0.2	AR1BSI004	Weyerhaeuser Company	Simpson, MS	6,000 x 15	Gravel/Dirt	Temp	Existing	Grade existing	2.1/0
0.3	AR1BSI004B	Weyerhaeuser Company	Simpson, MS	3,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.1/0
9.4	AR1BSI003	Jeff Turnage/Bernie Turnage	Simpson, MS	600 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.2/0
10.5	AR1BSI003A	J & N Timber	Simpson, MS	2,150 x 15	New	Perm	New	Clear & construct	0.7/0.67
10.9	AR1DSI002A	Equity Development	Simpson, MS	600 x 15	New	Perm	New	Clear & construct	0.2/0.14
12.9	AR1BSI006A	Jewell Macon	Simpson, MS	800 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.3/0
16.3	AR1BSI005	Billy Jim Thompson	Simpson, MS	1,500 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.5/0
18.3	AR1DSI001	Gloria Reviere	Simpson, MS	700 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.2/0
22.7	AR1BSI001A	North America Timber	Simpson, MS	1,100 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.4/0
23.1	AR1BSI001	North America Timber	Simpson, MS	1,300 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.4/0
24.6	AR1BSI002	Frances Shows/North America Timber	Simpson, MS	5,800 x 15	Gravel/Dirt	Temp	Existing	Grade existing	2.0/0
31.0	AR1BSM003	Plum Creek	Smith, MS	4,800 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.7/0
31.8	AR1BSM003A	Plum Creek	Smith, MS	1,600 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.6/0
33.5	AR1BSM002	Plum Creek	Smith, MS	2,400 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.8/0
39.2	AR1BSM002A	Eugene Tullos/GC Hankins/Larry Barnett, Amer Craft	Smith, MS	4,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.4/0
43.9	AR1BSM004	Alton Blakeney	Smith, MS	4,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.4/0
46.5	AR1BSM001	James Smith Et Al	Smith, MS	1,800 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.6/0
55.1	AR1BJS001	Charles Brown	Jasper, MS	1,000 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.3/0
58.7	AR1BJS002	Billie Windham/Tommie Stringer	Jasper, MS	4,100 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.4/0
58.8	AR1BJS002A	Gauins/Gammage/Hosey/Windham	Jasper, MS	4,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.4/0
59.0	AR1DJS001A	JS Scott Jr.	Jasper, MS	4,000 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.4/0
59.8	AR1DJS001C	Betty Windham	Jasper, MS	5,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.8/0
61.5	AR1BJS003	Anderson Tully Company	Jasper, MS	2,900 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.0/0
63.2	AR1BJS004A	Mary Simms	Jasper, MS	2,100 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.7/0
63.6	AR1BJS004	Mary Simms	Jasper, MS	2,400 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.8/0
69.1	AR1DJS002	Sarah Life	Jasper, MS	3,600 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.2/0

TABLE G-2
New and Modified Access Roads for the Proposed Southeast Expansion Project

MP	Feature ID	Ownership	County	Length x Width (ft)	Existing Road Type	Temporary/ Permanent Use	New/ Existing	Modification	Modification (acres) Temp/Perm
69.1	AR1DJS002A	Sarah Life	Jasper, MS	1,200 x 15	New	Perm	New	Clear & construct	0.4/0.34
69.9	AR1BJS005	Plummer Heidelberg Estate	Jasper, MS	800 x 15	Gravel	Temp	Existing	Grade existing	0.3/0
72.4	AR1DJS003	Lace Dace, Warren Seals	Jasper, MS	3,600 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.2/0
75.1	AR1DJS003A	O. C. Dantzier	Jasper, MS	350 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.1/0
80.3	AR1BCK005	Hall Tree Inc.	Clarke, MS	20,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	7.0/0
81.5	AR1BCK005A	Hall Tree Inc.	Clarke, MS	2,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.8/0
82.2	AR1BCK005B	Hall Tree Inc.	Clarke, MS	3,000 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.0/0
82.5	AR1BCK005C	Hall Tree Inc.	Clarke, MS	3,500 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.2/0
82.9	AR1BCK006	Hall Tree Inc.	Clarke, MS	4,800 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.7/0
85.7	AR1BCK002	Tommy Brady	Clarke, MS	6,300 x 15	Gravel/Dirt	Temp	Existing	Grade existing	2.2/0
86.8	AR1DCK001	Paul Duvall	Clarke, MS	400 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.1/0
93.0	AR1BCK003	Timber East	Clarke, MS	3,400 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.2/0
94.8	AR1BCK003A	Walter Lafferty	Clarke, MS	150 x 15	Gravel/Dirt	Temp	Existing	Grade existing	0.1/0
96.3	AR1DCK002	International Paper	Clarke, MS	6,600 x 15	Gravel/Dirt	Temp	Existing	Grade existing	2.3/0
99.5	AR1BCK004	Pauline Hunter/Ray Anderson	Clarke, MS	3,200 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.1/0
100.8	AR1BCK003	Timber East	Clarke, MS	11,500 x 15	Gravel/Dirt	Temp	Existing	Grade existing	4.0/0
100.8	AR1BCK003A	Timber East	Clarke, MS	9,000 x 15	Gravel/Dirt	Temp	Existing	Grade existing	3.1/0
104.3	AR1DCK004	Clarke County Schools	Clarke, MS	2,800 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.0/0
106.6	AR1DCW001	Mame LP, et al	Choctaw, AL	17,500 x 15	Gravel/Dirt	Temp	Existing	Grade existing	6.0/0
108.6	AR1DCW002	LA Timberlands	Choctaw, AL	6,400 x 15	Gravel/Dirt	Temp	Existing	Grade existing	2.2/0
110.6	AR1DCW003	LA Timberlands	Choctaw, AL	4,500 x 15	Gravel/Dirt	Temp	Existing	Grade existing	1.6/0
								Total	**63.2/1.2**

TABLE G-3
Existing Road Crossings for the Proposed Southeast Expansion Project

MP	Road Name	Road Type	Jurisdiction	Construction Method
0.8	Twin Lakes	Gravel	Simpson County	Bore
1.3	St. Hwy 469	Paved	State	Bore
2.5	Rexford	Paved	Simpson County	Bore
3.6	Rexford	Paved	Simpson County	Bore
4.9	Brasswell	Gravel	Simpson County	Bore
5.6	Star Braxton	Paved	Simpson County	Bore
6.6	Boggs	Gravel	Simpson County	Bore
7.7	Johnson	Paved	Simpson County	Bore
8.1	Holly Grove	Paved	Simpson County	Bore
8.9	Bynum	Gravel	Simpson County	Bore
9.2	Harrisville Braxton	Paved	Simpson County	Bore
10.2	Ash	Paved	Simpson County	Bore
11.6	Gum Springs	Paved	Simpson County	Bore
11.9	St. Hwy 149	Paved	State	Bore
12.2	Sawmill	Gravel	Simpson County	Bore
12.6	US 49	Paved	Federal	Bore
14.1	Saint John	Paved	Simpson County	Bore
14.8	Cato	Paved	Simpson County	Bore
16.0	Campbells Creek	Paved	Simpson County	Bore
17.5	Strong River	Gravel	Simpson County	Bore
18.2	St. Hwy 13	Paved	State	Bore
19.7	Ponder Mason	Gravel	Simpson County	Bore
20.6	Everett Church	Asphalt	Simpson County	Bore
21.6	Shows	Asphalt	Simpson County	Bore
21.8	Jones Layton	Asphalt	Simpson County	Bore
22.4	Jones Layton	Asphalt	Simpson County	Bore
23.1	Layton Jones	Gravel	Simpson County	Bore
23.4	St. Hwy 541	Paved	State	Bore
25.2	Dr Magee	Asphalt	Simpson County	Bore
26.3	Cole	Asphalt	Simpson County	Bore
28.0	Sixteen Section	Gravel	Simpson County	Bore
28.1	St. Hwy 540	Paved	State	Bore
29.0	Dry Creek	Asphalt	Simpson County	Bore
29.3	Martin	Asphalt	Simpson County	Bore
30.3	CR 503	Paved	Smith County	Bore
31.8	CR 540-1 (Georgia Pacific Land)	Gravel	Smith County	Bore
32.8	Green Grass	Gravel	Smith County	Bore
35.2	CR 121 (Shopping Center)	Paved	Smith County	Bore
36.3	CR 77 and CR 77-3	Asphalt	Smith County	Bore
37.3	St. Hwy 35	Paved	State	Bore
37.7	CR 35-6	Asphalt	Smith County	Bore
38.6	St. Hwy 37	Paved	State	Bore

TABLE G-3
Existing Road Crossings for the Proposed Southeast Expansion Project

MP	Road Name	Road Type	Jurisdiction	Construction Method
41.6	CR 93	Asphalt	Smith County	Bore
42.6	CR 84	Asphalt	Smith County	Bore
42.8	CR 19	Gravel	Smith County	Bore
45.7	CR 99	Asphalt	Smith County	Bore
49.4	St. Hwy 531	Paved	State	Bore
50.1	CR 9	Paved	Jasper County	Bore
51.5	St. Hwy 15	Paved	State	Bore
52.9	CR 17	Paved	Jasper County	Bore
53.8	CR 5282	Gravel	Jasper County	Bore
54.1	CR 1725	Asphalt	Jasper County	Bore
54.4	CR 1725	Asphalt	Jasper County	Bore
57.4	CR 23	Paved	Jasper County	Bore
58.2	CR 2337	Gravel	Jasper County	Bore
60.0	CR 2333	Paved	Jasper County	Bore
61.5	CR 52812	Gravel	Jasper County	Bore
65.0	CR 31	Asphalt	Jasper County	Bore
65.6	CR 52824	Gravel	Jasper County	Bore
66.4	CR 52830	Gravel	Jasper County	Bore
68.8	St. Hwy 528	Paved	State	Bore
69.4	US Hwy 59	Paved	Federal	Bore
69.5	CR 8	Asphalt	Jasper County	Bore
70.6	CR 35	Asphalt	Jasper County	Bore
70.7	CR 8	Asphalt	Jasper County	Bore
70.9	CR 828	Asphalt	Jasper County	Bore
73.5	CR 115	Paved	Jasper County	Bore
73.9	US Hwy 11	Paved	Federal	Bore
75.0	CR 642	Gravel	Jasper County	Bore
75.4	CR 39	Asphalt	Jasper County	Bore
76.0	CR 235	Asphalt	Clarke County	Bore
76.9	CR 2301	Gravel	Clarke County	Bore
77.9	CR 240	Asphalt	Clarke County	Bore
79.0	CR 216	Dirt	Clarke County	Bore
83.4	CR 250	Asphalt	Clarke County	Bore
83.7	CR 270	Asphalt	Clarke County	Bore
84.1	CR 2702	Gravel	Clarke County	Bore
87.6	CR 266	Asphalt	Clarke County	Bore
87.9	US Hwy 45	Paved	Federal	Bore
88.2	CR 2661	Asphalt	Clarke County	Bore
88.4	CR2661	Asphalt	Clarke County	Bore
90.6	CR 695	Asphalt	Clarke County	Bore
91.3	CR 694	Asphalt	Clarke County	Bore
93.4	CR 680	Gravel	Clarke County	Bore

TABLE G-3
Existing Road Crossings for the Proposed Southeast Expansion Project

MP	Road Name	Road Type	Jurisdiction	Construction Method
94.8	CR 615	Asphalt	Clarke County	Bore
95.2	CR 630	Asphalt	Clarke County	Bore
98.0	CR 665	Asphalt	Clarke County	Bore
99.1	St. Hwy 511	Paved	State	Bore
101.6	CR 650	Asphalt	Clarke County	Bore
101.8	CR 657	Asphalt	Clarke County	Bore
102.9	Pine Ridge	Paved	Clarke County	Bore
105.0	CR 411	Gravel	Choctaw County	Bore
109.4	CR 8	Paved	Choctaw County	Bore

TABLE G-4
Pipe Storage and Contractor Yards
for the Proposed Southeast Expansion Project

Yard Designation	County, State	Location	Original Land Use	Temporary Impact (acres)	Permanent Impact (acres)
Site 1	Hinds, MS	2648 Old Highway 51 Terry, MS	Contractor Yard for Gulf South's East Texas to Mississippi Expansion Project	15.0	0
Site 2	Jones, MS	5 Thames Blvd Laurel, MS	Industrial Yard at Laurel Airport	20.0	0
Site 3	Lauderdale, MS	1602 60th Place South Meridian, MS	Industrial Yard at Meridian Airport	6.0	0
			Total	**41.0**	**0**

APPENDIX H

MINOR ROUTE VARIATION MAPS

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Non-Internet Public

ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED SOUTHEAST EXPANSIONPROJECT
Docket No. CP07-032-000

Figure H-1
Sheets 1-16
Appendix H
Minor Route Variations

Public access for this Non-Internet Public information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

APPENDIX I

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APPENDIX J

LIST OF PREPARERS

LIST OF PREPARERS

Federal Energy Regulatory Commission

Polit, Juan – Project Manager
M.S., Forest Ecology, 1992, University of Illinois
B.S., Forestry, 1989, University of Illinois

Peconom, John – Assistant Project Manager
B.S., Environmental Biology and Management, 2000, University of California at Davis

Button, Van – Cultural Resources, Socioeconomics
M.A., Anthropology, 1976, University of Arizona
B.A., Anthropology, 1973, Reed College

Manco, Magdalene – Air Quality/Noise/Reliability and Safety
B.S., Environmental Systems Engineering, 2004, Pennsylvania State University

PBS&J

Sutton, Kari - Project Manger: Proposed Action, Alternatives
M.S., Wildlife Biology, 1997, Southwest Texas State University
B.S., Wildlife Biology, 1994, Southwest Texas State University

Letson, Mike - Assistant Project Manger: Proposed Action, Alternatives, Reliability and Safety
M.S., Limnology, 1991, State University of New York, College at Brockport
B.S., Biology, 1988, State University of New York, College at Brockport

Asteris, Kerry - Water Resources
B.S., Environmental Science, 1996, Stephen F. Austin State University

Branom, John - Wildlife and Aquatic Resources
B.S., Marine Biology, 2000, Southwest Texas State University

Dusek, Heather - Air Quality and Noise, Wetlands, Vegetation
M.S., Environmental Science, 1998. Stephen F. Austin State University
B.S., Environmental Science and Ecology, 1997, Stephen F. Austin State University

Fitzgibbons, Kim - Alternatives, Proposed Action
M.S., Biology and Coastal Zone Studies, 1996, University of West Florida
B.S., Marine Science, 1994, University of South Carolina Coastal, Conway

Fulmer, John - Cultural Resources
M.S., Anthropology, 1992, University of Southern Mississippi
B.A., Anthropology, 1989, University of Southern Mississippi

Gutierrez, Paula - Cumulative Impacts, Water Resources
M.S., Wildlife Science, 2001. Texas A&M University
B.S., Forest and Wildlife Management, 1998, Stephen F. Austin University

Jones, Melinda, P.G. - Geology
M.S., Geology, 1997, Baylor University
B.A., Anthropology, 1993, Baylor University

LaRue, Trisha - Cumulative Impacts
M.S., Land Design and Management, 2004, Southwest Texas State University
B.S., Biology, 1998, Angelo State University

Norton, Dale - Cultural Resources
B.A., Anthropology, 1998, Southwest Texas State University

Olday, Nathan - Threatened and Endangered Species
B.S., Wildlife Ecology, 2000, Texas A&M University

Porter, Nancy – Soils and Geology
B.S., Anthropology, 2000, University of Houston

Racki, Tabitha - Socioeconomics, Land Use, Recreation and Special Interest Areas, and Visual Resources
B.S., Geography (Urban and Regional Studies), 1998, University of Iowa

Silosky, Joanna - Threatened and Endangered Species, Water Resources, Vegetation
B.A., Ecology, 2004, University of Illinois

John Fields, Argent. Air Quality
Post-graduate work Environmental Engineering, 1993 (no degree conferred), University of Houston
M.S., Environmental Science, 1992, University of Texas at San Antonio
B.S., Engineering Science, 1989, Trinity University

APPENDIX K

CONSERVATION STRATEGY FOR THE GOPHER TORTOISE AND EASTERN INDIGO SNAKE

1.0 CONSERVATION STRATEGY FOR THE GOPHER TORTOISE AND EASTERN INDIGO SNAKE

The following conservation strategies are designed to minimize potential impacts to gopher tortoises and Eastern indigo snakes that occur in the vicinity of the proposed Southeast Expansion Project (Project) as well as methods for handling unanticipated discoveries or encounters of either species. The strategies detailed below are common to many of the projects which have recently been granted by the US Fish and Wildlife Service (FWS) and the Federal Energy Regulatory Commission (FERC).

Gulf South has determined the location of gopher tortoise burrows within and adjacent to the construction right-of-way during field surveys. Gulf South will use this information as a baseline for gopher tortoise occupation of the right-of-way. Gopher tortoise surveys methods used by Gulf South are presented in Appendix A of this Conservation Strategy.

1.1 Construction Personnel Education

All Project construction personnel will be provided comprehensive training with respect to gopher tortoises and eastern indigo snakes based on the personnel's individual level of involvement with the proposed Project. This training will include gopher tortoise and Eastern indigo snake identification methods, and training on the measures to be implemented in the event that an individual or burrow is encountered during Project activities. The training will emphasize that any contact or handling of a gopher tortoise and Eastern indigo snake is prohibited, unless under the direction of the contract qualified biologist or that either species is in a position of imminent harm.

Training will include:

1. Reasons for species protection and its protection status;

2. Penalties for killing, injuring, harassing, or otherwise disturbing a gopher tortoise or its burrow, or an Eastern indigo snake;

3. Discussion of the conservation strategy detailed herein and noncompliance with; and

4. Procedures for contacting qualified biologists should an individual gopher tortoise or Eastern indigo snake be encountered.

1.2 Pre-Construction Surveys

Prior to any construction activity commencement, work areas where gopher tortoises were identified during field surveys will be resurveyed by qualified personnel to determine if dispersion or movement has occurred. Previously unidentified gopher tortoise burrows will be documented and mapped using GPS devices. Efforts will be made to inspect all active and inactive burrows using a remote infrared video camera system that enables a determination of occupancy by tortoises or commensals such as the Easter indigo snake.

Upper Respiratory Tract Disease (URTD) has been detected in an increasing number of gopher tortoise populations in the southeast over the past decade. In order to prevent the potential spread of this disease while handling gopher tortoises, latex gloves will be worn, and

all equipment (including guide pole, scope, scale, measuring equipment, shovels, etc.) will be thoroughly cleaned with a ten percent bleach solution following each contact with an individual gopher tortoise or burrow.

Burrows will be identified using a unique numbering system to facilitate proper monitoring. Following completion of the initial re-surveys of the proposed right-of-way and before construction, a report will be submitted to the FWS and the Mississippi Museum of Natural Science (MMNS) containing information on any gopher tortoise individuals that will require capture and relocation. Gopher tortoises and burrows in area adjacent to the construction right-of-way will be excluded from the construction zone by barricading silt fencing or orange construction fencing erected along the edge of the right-of-way to prevent accidental contact with and damage from construction equipment.

1.3 Collection of Gopher Tortoises for Relocation

Collection of gopher tortoises from the work areas will be determined on an individual basis and will be constrained as follows:

1. Any personnel involved with the relocation of a gopher tortoise will have experience in working with gopher tortoises and be under the supervision of the qualified biologist;

2. Any activities resulting in the capture/relocation of a tortoise will occur only from April 1 to October 15;

3. A qualified biologist will determine whether any burrows show signs of nesting. If determined that a burrow may have eggs buried within the apron, they will be hand excavated, carried without rotation, and reburied at a suitable location. Egg relocation sites will be protected using two-inch mesh to enable hatchlings to escape, while predators are excluded;

4. If an individual is captured outside or near the entrance of a burrow, the burrow will be examined with a remote infrared video camera system. If no additional tortoises or commensal species are present, the burrow will be excavated with a backhoe to verify that the burrow is unoccupied and then filled in to prevent reoccupation;

5. Small sub-adult and hatchling burrows will be shovel excavated. Small flexible tubing (PVC, HDPE) will be entered into the burrow to determine depth and shape of the burrow and will be used as a guide for digging the burrow. This tubing will be graduated to aid in determining burrow depth. As shovel digging approaches the end of the burrow, hand digging will replace shoveling until completion of the burrow is reached. Following removal of the tortoise, backfilling can occur;

6. Backhoe digging of adult burrows will occur using the same steps as shoveling. Backhoe buckets will have their teeth removed or a metal plate welded over the teeth. A flexible tubing will be inserted into the burrow to be used as a guide for the backhoe operator and to ensure the path is maintained. A qualified person will inspect the progress of the digging. The last one or two feet of the burrow path are to be hand dug. Following extraction of the tortoise, backfilling can proceed;

7. Captured tortoises will be sexed, aged, permanently marked using standard marginal scute numbering (Cable, 1944);

8. Sick or injured tortoises will be brought to a local veterinarian for treatment by a qualified person with FWS and MMNS approval to move tortoises. If injuries are critical, it will be euthanized. Documentation for all tortoises brought to a veterinarian will be submitted to the FWS and the MMNS;

9. All materials used to capture, dig, relocate gopher tortoises will be sanitized using a ten percent bleach solution after each use to prevent spread of disease; and

10. Handling of gopher tortoises will be by qualified personnel wearing latex gloves and gloves will be changed after handling each turtle to prevent spread of disease.

1.4 Relocation of Gopher Tortoises

As has been shown with previous pipeline projects (Wester and Kolb, 1999; Thomas, 2001), gopher tortoises temporarily displaced from the construction corridor will likely remain in the immediate vicinity of their capture and will be able to reoccupy their original home range once construction and re-vegetation activities are completed. Therefore, Gulf South proposes to temporarily relocate directly impacted individuals from the proposed right-of-way into nearby burrows within their normal range. In locations where nearby burrows do not exist, starter burrows will be dug for release of displaced tortoise following the guidelines outlined in Gulf South's Gopher Tortoise Standard Operating Procedures for Protecting Gopher Tortoise Along Existing Rights-of-Way (Appendix B of this Conservation Strategy). All relocations will be within the same colony and will be supervised and directed by the qualified biologist approved for such activity and with proper permits.

The relocation of individuals from the construction areas will be conducted in accordance with the following guidelines:

1. Relocations will occur only between April 1 and October 15;

2. Relocation will take place immediately to previously selected inactive/abandoned burrows of similar size and in the same general area;

3. All tortoises to be relocated will be examined for Upper Respiratory Disease (URD). Systematic tortoises will be separated from other tortoises and reported to the FWS and the MMNS. Blood samples will be taken by qualified personnel and sent to the University of Florida for testing in accord with methodologies provided by the University of Florida and as required by the FWS and the MMNS;

4. All recipient burrows will be scoped to determine activity status prior to releasing captured individuals; and

5. A report will be prepared to detail the relocation efforts to both the FWS and the MMNS.

1.5 Construction Monitoring

An environmental inspector (EI) thoroughly trained in the procedures included in this Conservation Strategy will be on-site at all times to ensure compliance with all aspects of this plan, environmental permits, the FERC Certificate, and the Endangered Species Act (ESA). A qualified biologist with all necessary state and federal endangered species permits will be available at all times during construction to handle any gopher tortoise or eastern indigo snake issues as they arise. This biologist will provide continued training on listed species throughout construction to all construction personnel as needed.

1.5.1 Burrow Adjacent to Construction Corridor

Individual gopher tortoises, or gopher tortoise colonies located adjacent to, and outside of the construction corridor, will be protected from impacts by installation of silt fence or orange barricade type fencing. To prevent tortoises from wandering into construction areas, fencing will be placed on the outer edge of the proposed construction corridor and buried to a minimum depth of 6 inches below grade. Additionally, fencing will help to prevent inadvertent impacts from construction equipment and personnel to these areas by clearly demarcating these areas. The exact location and placement of fencing will be determined by a qualified biologist and be appropriate for the habitat being affected. Signage will be posted to clearly demarcate these areas. The EI will monitor all installed fencing at a frequency determined by the qualified biologist to insure proper functioning. Following construction, all gopher tortoise fencing will be removed and the flora and fauna allowed to re-inhabit the area.

1.5.2 Access Roads

All access roads in the general vicinity of areas where there are known populations of gopher tortoises or Eastern indigo snakes will be resurveyed prior to construction. Additionally, the following guidelines will be adhered to further protect individual species;

1. Signs will be placed on unimproved access roads where there are known colonies of gopher tortoises and speed limits restricted to 10 MPH.

2. If a burrow is located within 50 feet of an unimproved road, it will be barricaded with exclusion silt fencing or orange construction fencing, with a minimal length of 150 feet.

3. All unimproved access roads in the vicinity of known gopher colonies or burrows will be examined daily for the presence of wandering individuals.

1.5.3 Right-of-Way Surveying Throughout Construction

In order to further minimize impacts to gopher tortoises and Eastern indigo snakes, Gulf South will conduct regular surveys throughout the duration of construction. The following is a listing of proposed re-surveys to be conducted during construction:

1. Re-survey the right-of-way as necessary to document any new locations or activities of gopher tortoises or Eastern indigo snakes;

2. Survey all open trenches for individual tortoises or Eastern indigo snakes daily and before backfilling. Should a tortoise be found during these surveys, the qualified

biologist should be contacted so that it may be removed in accord with proper handling procedures; and

3. All spoil piles within the general vicinity of known gopher tortoise populations will be surveyed daily by a qualified biologist to ensure that no tortoises have colonized the spoil piles. If a burrow is located in a spoil pile, it will be excavated in accord with this plan and under instruction of the qualified biologist.

1.5.4 Construction Monitoring

All monitoring of the terms and conditions of the biological assessment and conservation strategy will be carried out by the EI under instruction of the qualified biologist. Roles and responsibilities with respect to this biological assessment include:

1. At all times the qualified biologist will be available to the EI;

2. The EI will have stop work authority and direct contact with the environmental project manager and construction superintendent should a burrow or individual gopher tortoise be located with potential to be impacted by the proposed Project;

3. Except in the event that a gopher tortoise or Eastern indigo snake is in immanent danger that might lead to the injury or mortality, no personnel, other than a qualified biologist, shall handle or disturb a tortoise;

4. Any violations of the conditions or terms of this document, the FERC Certificate, or the ESA shall be reported to the environmental project manager who will contact the FWS and the MMNS;

5. Monitoring will continue until deemed complete by the FWS and the MMNS.

1.6 Operation and Maintenance

Gulf South is proposing a 60-foot wide permanent right-of-way; however, we have recommended a permanent right-of-way of 50 feet. The area will be planted with grasses that normally occupy such rights-of-way such as dallis, Bermuda, and Bahia grasses. Gulf South will follow the Standard Operating Procedures for Protecting Gopher Tortoises for the Project as summarized below and included as Appendix B of this Conservation Strategy. Gulf South will also follow the guidelines outlined in their Unanticipated Discoveries/Encounters with Eastern indigo snakes that is included in Appendix C of this Conservation Strategy.

1.6.1 Training

Qualified personnel will be used to determine if gopher tortoises or Eastern indigo snakes are present on a construction site before work begins. These personnel will be Gulf South employees or contracted mowing personnel that have been trained to identify gopher tortoises, their habitat, and/or burrows, as well as eastern indigo snakes. A training module, including gopher tortoise and Eastern indigo snake identification keys and habitat information will be provided to personnel who will be responsible for the right-of-way clearance. Maps showing the locations of known active/inactive burrows on the right-of-way will be provided to mowing personnel, as needed. A list of personnel who have completed training will be provided upon FWS request.

1.6.2 Reporting

Reporting of findings will be made by trained personnel on all jobs in affected counties/parishes. Inspection report forms will be retained for inclusion in reporting under the FERC blanket or for any reporting requested by the FWS under the terms of their approval of this plan or subsequent consultations.

1.6.3 Small Excavations

Small excavations are routinely necessary for replacing valves, sections of pipe or small appurtenance construction. Prior to the excavation, the area within which work will be conducted (including the area to be excavated and the path that equipment will be traveling) will be surveyed for tortoise burrows and individual tortoises. If an individual tortoise or Eastern indigo snake is encountered, they will be allowed to leave the area without contact from any Gulf South staff or its contractors. If maintenance activities are required within 50 feet of tortoise burrows, the burrows will be clearly marked for avoidance, and the FWS will be contacted for consultation. If an active burrow cannot be avoided, then Gulf South will initiate formal consultation with the FWS.

Except for travel on existing roads and paths, routine maintenance activities will be restricted to areas beyond at least 50 feet from tortoise burrows. Where these maintenance activities require work be performed closer than 50 feet from burrows, only hand-held equipment will be used, and maintenance personnel will avoid the burrow apron, entrance and area immediately behind the entrance.

If excavations are to be left unattended in areas where gopher tortoises have been identified, the area will be fenced to prevent gopher tortoises from entering the excavation area. Small excavation projects such as those applicable to this management plan are unlikely to exceed two days from the initial date of ground disturbance. Excavation areas within 100 feet of tortoise burrows will be surrounded by a fence with a minimum 2-inch mesh to exclude tortoises during construction. Attention should be paid to the bottom of the fence to make sure that it is secured to prevent tortoises from going underneath the fence. Enough area should be fenced to allow work to proceed within the enclosure with minimal limitations on tortoise foraging habitat as practical. Fencing should remain in place until the excavation is backfilled.

All excavated trenches and underneath vehicles will be checked daily for tortoises before commencing work. All maintenance debris that could hinder tortoise movement will be removed at the completion of construction activities.

1.3.4 Right-of-Way Mowing

The mowing of rights-of-way is a necessary and regulated practice. Since gopher tortoises and Eastern indigo snakes have been documented to utilize existing rights-of-way, special attention should be given before and during mowing activity. The right-of-way should be walked before mowing begins to determine areas of occupied habitat and potentially occupied habitat. When mowing in these areas, a “tortoise monitor” will verify that the right-of-way is clear immediately ahead of the mowers. Individual tortoises should be allowed to move out of the path of the mowers. Gopher tortoises are active year round; however their activity slows down in the winter months. When possible, mowing should be conducted in the winter (between November 1st and March 1st) to reduce the likelihood of encountering gopher tortoises. If practical, mowing should be planned for cloudy days when the temperature is below 50ºF. This

will further reduce the probability of encountering a tortoise. Mowing will be conducted at a frequency sufficient to maintain suppression of woody growth, and in accord with FERC and US Department of Transportation (DOT) standards. In addition, no herbicides will be used to control vegetation within areas occupied by tortoises.

Maintenance personnel will use hand-held power equipment to mow vegetation surrounding the burrows. Hand-pushed mowers and hand-held equipment will be used within 50 feet of tortoise burrows, and maintenance personnel will avoid mowing across the burrow apron, burrow entrance, and the area immediately behind the entrance.

1.3.5 Pipeline Leaks and Emergencies

In case of emergency such as a pipeline leak or blowout, it may be necessary to initiate repair work immediately. If this occurs in an area inhabited by gopher tortoises, every effort will be made to protect the burrows and individuals. Gulf South will contact qualified personnel to address any and all impacts to gopher tortoises. This will include immediate assessment of the potential effects of the situation, and every effort will be made to minimize or avoid such any potential adverse effects. Any such events will be reported to appropriate FWS Field Offices and state agencies.

2.0 POST-CONSTRUCTION MONITORING, COORDINATION AND REPORTING

The pipeline right-of-way will be monitored for three years following the initial relocations of gopher tortoises to assess the success of relocation efforts. Surveys will be conducted during the active periods of the year. Burrows located within the right-of-way will be identified and located with GPS coordinates. The status of starter and relocation burrows will also be assessed during surveys. Using GIS technology, these burrows will be mapped and compared to pre-construction and yearly post-construction data.

Gulf South will compile the findings of this monitoring efforts into an annual summary report and present its findings to the FWS and the MMNS beginning one year after construction completion and site restoration.

3.0 References

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APPENDIX A

SURVEY METHODOLOGY FOR GOPHER TORTOISES AND EASTERN INDIGO SNAKES

1.0 SURVEY METHODOLOGY

Areas of suitable gopher tortoise habitat, as described in the following section, as well as areas considered to be of marginal quality will be “100 percent” surveyed for the presence of tortoise burrows. Survey sites will be divided into consecutive “site distance” strip transects, each of which will be traversed, on foot, by a member of the survey team across the entire width of the survey corridor as required. The width of each transect will be determined by ground visibility within the site. In other words, a site composed of pasture, recent timber clear-cut, or other forms of open land will have a greater transect width than that of a very thick timber stand with reduced sight distance. Transect widths may range from 10 to 50 feet, depending on ground visibility within the site.

If a tortoise burrow is found, the coordinates for the burrow will be documented, a photo taken, and the location and activity status will be documented as active, inactive, or abandoned. The classification for activity status is defined below and is based on the appearance of the burrow apron and entrance at the time of survey.

1. Active – most likely occupied by a tortoise; as evidenced by presence of tortoise, freshly dug sand, tortoise tracks, or tortoise scat.

2. Inactive – used by a tortoise as part of a home range with other burrows, but is not currently occupied. Evidence includes absence of active burrow signs listed above and/or the presence of debris in burrow entrance.

3. Abandoned – most likely not occupied by a tortoise for many years; as evidenced by deteriorated nature of burrow entrance, (i.e. burrow collapsed, lack of maintained apron, sand washed in, etc.) Old burrows are in such a condition that they are not considered to be good candidates for future use by tortoises.

Gopher tortoises occupy a wide range of upland habitat types. The general physical and biotic features thought to characterize suitable adult tortoise habitat are:

1. Presence of well-drained, sandy soils, which allow easy burrowing;

2. Abundance of herbaceous ground cover; and

3. Generally open canopy and sparse shrub cover, which allows sunlight to reach the ground floor (Cox et al., 1987).

1.1 Soils

Soil conditions are responsible for the nature of habitats preferred by tortoises. The U.S. Fish and Wildlife Service has assigned each soil series as either a priority, suitable, marginal, or unsuitable type for the gopher tortoise. US Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) county soil survey maps can be obtained either from the NRCS website (if available) or from the local NRCS office.

1. Priority soils are humus poor, excessively well-drained, relatively deep to deep sandy soils, without fragipans. These soils typically occur on the highest upland positions

and adjacent side slopes. Priority soils include Lakeland, Alaga, Eustis, and Troup/Waldey.

2. Suitable soils consist of deep, well drained, loamy sands, without fragipans. Suitable soils, in comparison to priority soils, have horizons with a greater portion of clay. Suitable soils usually occupy topographically adjacent and lower positions when associated with priority soils. Suitable soils include Benndale, McLaurin, Smithdale, and Ruston.

3. Marginal soils are deep, moderately well drained soils, with a greater amount of clay or plinthite, which may include fragipans. Marginal soils are not classified as hydric or wetland soils. Marginal soils include Poarch, Saucier, Susquehana, Freest, and Lucy types.

All other soil series are considered unsuitable soils. These soils frequently are classified as hydric, or they occur on stream terraces and floodplains.

1.2 Vegetation

The vegetation characterizing gopher tortoise habitats varies with geography, soil type, and past and present land use. Long-leaf pine (Pinus palustris) , loblolly, slash pine(loblolly) and/ or hardwood trees (i.e. turkey oak, blackjack oak, wax myrtle, etc) can often be found at such sites. Herbaceous vegetation tends to be composed of species tolerant of dry conditions (i.e. wiregrass, prickly pear, reindeer moss, gopher apple, blackberry, and several grasses of the genera Andropogon and Panicum).

Tortoise burrows also can be found along powerline and pipeline rights-of-way, road rights-of-way, and ruderal habitats; including fence rows, orchard edges, golf course roughs and edges, old fields, and pasturelands. Tortoises are often pushed into these areas due to adjacent habitat becoming unsuitable (i.e. thick under and mid story canopy, residential and commercial development, etc).

APPENDIX B

GULF SOUTH'S STANDARAD OPERATING PROCEDURES FOR

PROTECTING GOPHER TORTOISES

ALONG EXISTING RIGHTS-OF-WAY

January, 2007

Before any tortoise can be handled, moved, harassed, etc., Gulf South must first obtain a federal incidental take permit from the FWS and a state permit from the MDWFP.

This Standard Operating Procedure (SOP) is to be included into all future biological assessments submitted to the FWS during formal consultation per Section 7 the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). This SOP will be considered part of the "proposed action" for that particular project.

This SOP is intended to cover the majority of tortoise relocation issues. Additional information may need to be included on a project by project basis such as specific relocation site information, additional monitoring and reporting, etc.

Contact Information

Cale LeBlanc
Environmental Specialist
111 Park Place, Suite 100
Covington, LA 70433
Office: 985-898-1051
Cell: 985-791-8395

David Felder, Biologist
U.S. Fish and Wildlife Service
6578 Dogwood View Parkway
Jackson, MS 39213
Office: 601-321-1139
Cell: 601-720-6458

Tom Mann, Tortoise Biologist
MS Department of Wildlife, Fisheries, and Parks
2148 Riverside Drive
Jackson, MS 39202
Office: 601-354-7303

1.0 COLLECTION OF TORTOISES FROM PROJECT AREA

a) Gopher tortoises will only be captured and relocated during the active season (April 1 to October 1).

b) All burrow excavation efforts will be directly supervised by a biologist with experience excavating gopher tortoise burrows. All active burrows will be fitted with wire have-a-hart traps. All traps should be clearly marked "Do not disturb". Traps will be sufficiently shaded to prevent overheating of a trapped tortoise and will be checked twice daily, once in late morning and once in late afternoon. Hatchling and subadult burrows will be hand excavated, using shovels. Backhoes may be used to excavate adult burrows if have-a-hart traps fail to trap tortoises.

c) Before beginning hand or backhoe excavation, a flexible tube, with length graduations marked, will be inserted into the burrow to ensure that the burrow path is

not lost and to indicate the distance to the end of the burrow or to the tortoise/commensal. Throughout the excavation process, the burrow will be frequently inspected to ensure that the tortoise/commensal has not moved to a position where it might be injured by the backhoe or shovel. The last one - two feet of the burrow will be excavated by hand using shovels and small hand spades. Following removal of the tortoise/commensal, all excavated burrows will be refilled.

d) Captured gopher tortoises will be photographed (dorsal, ventral, and anterior views for tortoises), measured, weighed, sexed (if possible), aged (if possible), and marked using a standard marginal scute numbering scheme.

e) All relocated gopher tortoises will be examined for visual signs of upper respiratory tract disease (URTD). A blood sample will be collected for each tortoise and sent to the University of Florida for an ELISA test for URTD antibodies. Because of the specialized expertise needed for this sampling effort, field personnel should have experience extracting blood for URTD analysis according to the protocol established by the Gopher Tortoise Council. Immediately following data/blood sample collection, each tortoise will be given an opportunity to drink water.

2.0 RELOCATION AND MONITORING OF TORTOISES FROM PROJECT ROW

a. If available, release burrows will be inspected with a remote video system to ensure that they are unoccupied. In areas with limited numbers of existing unoccupied burrows, starter burrows will be dug for release of displaced tortoises. Starter burrows will be dug at a 20-30 degree angle with shovels/post hole diggers/power augers to the greatest distance possible (minimum 3-4 feet). Starter burrows should have a size and shape similar to the burrow being replaced.

b. All colonies will remain intact and starter burrows for each colony will be located within 600 feet of each other. Starter burrows and tortoises will be temporary penned using silt screen fencing material for seven days. Individual pens will be a minimum of 40 feet in diameter and round in construction to eliminate corners in which tortoises will tend to dig.

c. To minimize the risk of disease transmission, all material used during the displacement of gopher tortoises from the construction corridor (e.g., traps, shovels, backhoe buckets, remote video cameras, etc.) will be disinfected with a dilute chlorine solution after each use. Tortoises will be handled with disposable latex gloves.

3.0 CONSTRUCTION PERSONNEL EDUCATION

Before any construction activities, Gulf South will require all construction personnel to attend an educational presentation, conducted by trained personnel, to acquaint them with gopher tortoise ecology, their protected status, and Gulf South's conservation /mitigation efforts. Such a presentation will include:

a) An overview of the terms and conditions of the FWS's biological opinion and penalties for noncompliance.

b) Legal penalties for killing, injuring, harassing, or otherwise disturbing a gopher tortoise or its burrow.

c) Procedures for coordinating with and contacting the Project biologist.

4.0 MONITORING OF CONSTRUCTION ACTIVITIES

a) Any new burrows found within the construction corridor or spoil piles will be inspected for occupancy using a remote video system. Occupied burrows will be trapped or excavated and the tortoises/commensals handled, data collected and released into designated unoccupied/starter burrow following preconstruction procedures. Unoccupied burrows will be collapsed.

b) Except in emergencies, only gopher tortoise Project biologists and specifically trained environmental inspectors will be allowed to handle tortoises. Tortoise biologists and inspectors will have access to radios or cellular phones while in the field.

c) If a gopher tortoise is encountered by construction personnel within the construction corridor, all activities that might harm these species will cease and a Project biologist or environmental inspector will be summoned. The USFWS will be contacted to determine where the tortoise should be released.

d) If a gopher tortoise is found dead during construction activities, the Project biologist will be notified, who will then report the incident to the USFWS.

5.0 COORDINATION AND REPORTING

a) The development of a tortoise relocation plan (i.e. tortoise relocation and monitoring) and any significant changes to the proposed Project will be coordinated with the FWS. FWS personnel will be invited to visit the construction site and accompany Project biologist during all phases of the gopher tortoise conservation effort.

b) Following the relocation of tortoises, a report documenting the capture and displacement of gopher tortoises will include the following information: (1) names and qualifications of the investigators; (2) survey dates; (3) area surveyed, including mileposts; (4) specific burrow locations, including the milepost, distance from roadway centerline, and direction; (5) survey methods; (6) burrow size, condition, and activity level; (7) the individual marking used to identify each relocated tortoise or snake and their associated original and relocated burrow sites; (8) date of relocation; and (9) conclusions. The survey report will be sent to the FWS.

6.0 POST-CONSTRUCTION ROW MAINTENANCE AND OPERATIONS

a. Maintenance personnel will be trained in tortoise awareness. Maintenance personnel will use power equipment to mow vegetation surrounding the burrows, but will reduce their speed within 50 feet of burrows. Maintenance personnel will avoid mowing across the burrow apron, burrow entrance and the area immediately behind the entrance.

b. In case of an emergency (e.g., chemical or fuel leaks and/or spills), a gopher tortoise biologist will be called to the site as soon as possible to assess the potential impacts of the emergency and repair work on nearby tortoises, and to prevent further impacts during ongoing repair work. The FWS will be immediately contacted concerning any adverse effects on a gopher tortoise.

c. All tortoises or burrows found along existing roads will be reported to the Project biologist.

d. When a tortoise is found alive in the road and in danger of being hit by vehicular traffic, the tortoise should be moved to one side of the road. If the tortoise appears to be heading in one direction, move the tortoise to that side of the road. If unsure, then relocate tortoise to closest side.

e. If a tortoise is found in the road that has been hit by a vehicle, and is still alive, contact the Project biologist (Gulf South) or Tom Mann (MMNS), for coordination on where injured tortoises can be taken.

f. Dead tortoises found in Gulf South's right-of-way should be photographed if possible, location recorded (mile marker, north or south bound lane, etc), and reported to the Project biologist.

g. A database will be developed that catalogs the occurrence of tortoises/burrows found on Gulf South right-of-way, number of tortoises impacted by vehicles, location, etc.

APPENDIX C

UNANTICIPATED DISCOVERIES/ENCOUNTERS WITH EASTERN INDIGO SNAKE

EASTERN INDIGO SNAKE UNANTICIPATED DISCOVERIES/ENCOUNTERS

The Eastern indigo snake is a threatened species that occurs throughout peninsular Florida. This species is actually characteristic of moist habitats, but inhabits sandy xeric habitats in conjunction with gopher tortoises. In the drier habitats, the Eastern indigo snake will occupy gopher tortoise burrows. The preferred habitats include pine flatwoods, xeric oak stands, palmetto scrub, and tropical hammocks. No Eastern indigo snakes were observed within the proposed Southeast Expansion Project study area during any of the field surveys. The prevalence of potential habitat within the corridor could potentially involve the Eastern indigo snake. However, to minimize any impacts to any individual Eastern indigo snakes during construction, the following special provision will be included in the construction contract to advise the contractor of the potential presence of this species and its protected status:

- If an Eastern indigo snake is sighted during construction, the contractor will be required to cease all operation(s) which might cause harm to the snake.
- If the snake does not move away from the construction area, a state or federal biologist will be contacted to capture and relocate the snake to suitable habitat either adjacent to the proposed Project area or off-site to an acceptable donor site.
- If an Eastern indigo snake is killed or found dead within the construction area, the snake should be frozen and the FWS Jackson Field Office [(601) 965-5392] will be notified immediately.
- Due to the condition of the surrounding area, the abundance of habitat in the Project area, and the special provisions to protect transient individuals encountered during construction, the proposed Project is not anticipated to affect the Eastern indigo snake.

APPENDIX L

RESPONSE TO COMMENTS

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

SOUTHEAST EXPANSION PROJECT BY

GULF SOUTH PIPELINE COMPANY, LLP

Docket No. CP07-32-000

Public Hearing

Monday, 7:00 p.m. CDT

Tuesday, May 8, 2007

Mendenhall Community Center

1680-A Simpson Highway 149

Mendenhall, Mississippi

APPEARANCES:

Juan Polit

FERC - Project Manager

Kari Sutton

Program Manager

Bruce Snow

Steve Gonzalez

Doug Muskgrove

Gulf South

The Public

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ATTACHMENTS

(No Attachments Admitted.)

P-R-O-C-E-E-D-I-N-G-S

MR. POLIT: Good evening. Welcome to tonight's public comment meeting for the Southeast Expansion Project. Seeing that there's no one here yet except for one speaker, would you like to wait for another 15 or 20 minutes, and then I can reconvene and at that time you can speak and then we can wrap it you up? Or, would you rather go ahead and speak now?

MR. MITCHELL: It doesn't matter.

MR. POLIT: Okay. Well, why don't we make it 15 minutes and reconvene at --

MR. MITCHELL: 77:30.

MR. POLIT: 7:30 would be a good time.

(Off the record.)

(On the record.)

MR. POLIT: All right. It's 7:30 and I'll go ahead and resume my presentation, and we only have about two speakers here.

Again, my name Juan Polit. I work for the Federal Energy Regulatory Commission. That's FERC for short. I'm the FERC Environmental Project Manager for this project. I've written the DEIS with the assistance of my contractors. One of them is here tonight.

The purpose of tonight's meeting was to take comments from the public, either verbally or written, on environmental impacts related with the construction company of the Southeast Expansion Project, which is being proposed by Gulf South Pipeline Company.

This project was filed with the FERC in Docket Number CP07-032. We have -- the DEIS for the project was issued on April 13, 2007, and right now we're in the middle of a 45-day comment period which ends May 29th. All the comments that we get during this period, as well as before, will be addressed in the final EIS that the FERC staff will be preparing. The final EIS will summarize the expected environmental impact project and will become part of the information that the Commission will use in examining the application applied for by Gulf South.

Any written comment that we're getting tonight, or verbal comments as it may be, will be given the same consideration as any of the previous comments received by FERC for this projecting. When the Commission has concluded its evaluation of the issues related to the application, some of them non-enviromental, we'll issue a decision about the project in that order.

Well, with that, I would like to go ahead and start the comments. We have one speaker signed up here tonight, Mark Magee. I believe M-A-R-K M-A-G-E-E.

MR. MAGEE: (Nods head affirmatively.)

MR. POLIT: Okay. You can go ahead and take as long as you'd like. Use the microphone, please.

MR. MAGEE: I'm Mark Magee. I'm representing First Presbyterian Church in Jackson, Mississippi, 1290 North State Street.

First Pres owns Twin Lakes Conference Center, and I'm the director there at Twin Lakes. We are the closest land owner to the new Harrisville compressor station, proposed compressor station, some 2,000, 1,500 feet north of the compress or station, and the church wishes to oppose the construction of the compressor station based on lack of information on the size and scope of that project. There are concerns, generally, still concerning noise. There are concerns with construction noise. There is concerns concerning construction traffic. And where that traffic will go. We have a facility that has a wilderness camp and other campsites and cabins. We have a challenge

course of ropes, a ropes course, a climbing/repelling power, low and basic high and zip lines through the trees and a low ropes program where we do a lot of -- of team building and -- an lots of different types of exercises there. We also have a rivalry and archery range near that area. We also have a number of trails, horseback, biking, hiking trails in that that area. So there is a concern there.

Until we receive a little more information regarding barriers, buffers, mufflers and -- and different types of screens and barriers that can be around that area, to minimize the noise in that area; we also wish to oppose the pipeline itself based on the fact that this -- some of the similar concerns regarding construction traffic. We think the traffic can be routed in a way that it will have minimal impact, but we want to go on record to oppose so we can make sure that those issues are addressed.

MR. POLIT: Thank you. I can ask real quick, you also are concerned about operation noise in the long-term as well?

MR. MAGEE: We are. Just to make sure we minimize that operation noise, the Gulf South folks

have been very generous and gracious to gather information and speak to our issues so far, and we've even visited a compressor station to listen, and the church still wishes to oppose that based on what is felt to still need more information and make sure that everything is done as possible.

The church has owned this property for 36 years. It has invested over $10 million into that ministry, and we have around 12,000 people a year that attend. So there are a lot of people camping, a lot of people spending the night. We have several thousand children to come in the summer camping program, and it's just a place for a lot of different people to come and enjoy the peace and serenity and tranquility of the outdoors. So that is one of our main concerns, trying to protect that property for many years to come.

There is every indication that the church will keep that ministry an keep that location for generations and generations to come and -- can you think of anything.

MR. MITCHELL: (Nods head negatively.) No.

MR. MAGEE: Have you got any other questions?

9

MR. POLIT: Yeah. I was just kind of wondering if you have -- have you had a chance to look at the DEIS or have a copy of it?

MR. MAGEE: I have not. I've been sent a copy of some of the stuff and I saw the noise sensitive areas that were noted on the Harrisville station, and since then there's been some other indications of -- of some locations on our property regarding the decibel levels and things.

MR. POLIT: I'm trying to figure out if you're actually officially coded in our table.

MR. MAGEE: We're not. We're --

MR. POLIT: It doesn't like it.

MR. MAGEE: -- not yet. We're not yet.

MR. POLIT: Okay. So you're not yet.

MR. MAGEE: And that's one of the reasons we're bring this to light and the Gulf South folks have done some new GPS studies and -- and I think they've gathered all that information now. So those locations that we have concerns about, I think, are going to be addressed. P1-1

MR. POLIT: Well, we'll be happy to give you a copy and give a little bit more information. If you can point us out where you are in the maps --

MR. MAGEE: I can.

P1-1: The Final EIS in Sections 3.11.2.2 and 3.11.2.3 addresses the potential impacts to the Twin Lakes Conference Center, recent correspondence between Gulf South and Twin Lakes, and minimization of impacts to all camp activities. These measures include restricted use of certain local roads by construction crews and ingress and egress for the work site, and the requirement of noise abatement measures to be implemented for operation of the proposed Harrisville Compressor Station.

MR. POLIT: -- I don't have anymore questions for you. Thank you for your input here tonight.

MR. MAGEE: Thank you.

MR. POLIT: As I see, we don't have anymore speakers so I would like to go ahead and conclude this meeting of the FERC Energy Southeast Expansion Comment Meeting. Thank you very much.

(Time Noted 7:41 p.m.)

CERTIFICATE OF COURT REPORTER

I, Harvey J. Rayborn, Court Reporter and Notary Public in and for the County of Hinds, State of Mississippi, hereby certify that the foregoing pages, and including this page, contain a true and correct transcript of the above-said May 8, 2006, public meeting, as taken by me in the aforementioned matter at the time and place heretofore stated, as taken by stenotype and later reduced to typewritten form under my supervision by means of computer-aided transcription.

I further certify that I am not in the employ of or related to any counsel or party in this matter and have no interest monetary or otherwise, in the final outcome of this proceeding.

Witness, my signature and seal this 15th day of May, 2007.

_____

Harvey J. Rayborn, CSR #1274

My commission expires: 10/25/2008

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

Southeast Expansion Project by

Gulf South Pipeline Company, LP

Docket No. CP07-32-000

Public Hearing

Wednesday, 7:00 p.m. CDT

May 9, 2007

Heidelberg Multi Purpose Building

114 West Park Street

Heidelberg, Mississippi

APPEARANCES:

Juan Polit

FERC - Project Manager

Kari Sutton

Program Manager

Bruce Snow

Steve Gonzalez

Doug Muskgrove

Gulf South

The Public

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ATTACHMENTS

(No Attachments Admitted.)

P-R-O-C-E-E-D-I-N-G-S

MR. POLIT: Good evening. Welcome to tonight's public comment meeting for the Southeast Expansion Project. My name is Juan Polit and I work for the Federal Energy Regulatory Commission, and that's FERC for short.

FERC is interested in soliciting your comments about the recently published Draft Environmental Impact Statement. That's the Draft EIS for short. This one is written concerning the environmental impact associated with the project. As the FERC environmental manager for this project, I'm in charge of preparing the environmental review of impact inspected and I helped -- I've prepared the Draft EIS itself.

With me in the back here tonight is also Karie Sutton of PBS&J. This is our subcontractor. They helped write this document and they're assisting me tonight. FERC regards our contractor as an extension of FERC staff for the purposes preparing the document and conducting these comment meetings.

We also have some company representatives here. We also have a, finally, a court reporter who will be recording all comments that are given

verbally here tonight.

This project was filed with FERC in Docket Number CP07-32 by Gulf South Pipeline Company. The DEIS was issued April 13th, 2007, and the last day for the comment period, as mentioned in that document, is going to be May 29th. We will address these concerns in Final EIS, that first step. The Final EIS will summarize the expected environmental impacts of the project and will become part of the information that the FERC will use in examining Gulf South's application.

In addition to environmental issues, the Commission will also be considering issues related to gas transportation rates, engineering design and the overall need for the application.

When the Commission has concluded its evaluation of all of these different kinds of issues, it will issue its decision about the project in an order.

Written or verbal comments that we hear tonight will be given the same consideration as all those comments previously received by FERC.

The purpose of this public comment meeting tonight is to receive public and verbal or written comments on the DEIS. That's the Draft EIS. I am

providing you an opportunity to comment on issues related to the construction and operation of the proposed route. What I'm doing is asking you to identify any specific environmental concerns that you may have.

The format of this meeting is straightforward and simple. I'll be taking comments only. It's not really designed to be a question and answer session here in front of the court reporter, meaning I can't really discuss specific issues back and forth with you. However, once the comment session is over, I'll be happy to take anyone's specific or individual questions either up here at the table or in the back. I did bring some maps with me to help us if we need to; regardless, any such issues brought to my attention tonight will be addressed in the EIS.

Another way you can use specific comments, suggestions or hear out your concerns concerning impacts from this project on the environment is to file them as written comments directly with the secretary of the Commission. We have instructions that are contained in the DEIS that you should have received by now. Comments should be specific. Try to identify specific routes or route variations that

you know are going across your land or affecting you, and any other environmental aspects of the project like steam crossings, how it affects the way you use your land safety and all those kind of issues.

Some of you attending the meeting tonight may wish to be added to the environmental mailing list to receive a copy of the mailing of the Final EIS. If you received a copy of the Draft EIS, you are already on that list. If you give a comment tonight or any time in the future, you'll be put on that mailing list and you will receive the Final EIS.

Now, to get your comments tonight, the only rule I have is try to limit them to about five or ten minutes. Seeing that we have a smaller crowd tonight, you can go more than that if you would like to.

And I think with that I'll go to the comments and I'll just call each of you up here. If you can come up here and sit down or stand if you would like and use the mike, however you like, and just give your comments, and we'll have, first of all, how about -- is it Ricky Flournoy?

MR. FLOURNOY: Flournoy.

8

MR. POLIT: Flournoy. All righty. If you could spell that for our court reporter and any --

MR. FLOURNOY: F-L-O-U-R-N-O-Y.

MR. POLIT: -- anyone who comes up -- okay. Thank you. Go ahead.

MR. FLOURNOY: My concern is how much will it inconvenience citizens or the residents of the construction area with debris? Would it affect their normal living? Will they have to go out of the way or will they be inconvenienced in any way?

MR. POLIT: So you're mainly interested in construction related impacts?

MR. FLOURNOY: Yes.

MR. POLIT: Okay. Well, we have discussion on that already in the DEIS. We talk about -- I believe we talk about dust control and noise, traffic and safety.

P2-1

MR. FLOURNOY: And will there be any hazard or anything? Health hazards or --

MR. POLIT: Health hazards to people living in the area?

MR. FLOURNOY: Yes, sir.

MR. POLIT: I see.

P2-2

MR. FLOURNOY: Children and so forth?

MR. POLIT: Yes. We'll -- we'll take

P2-1: Potential construction related impacts to residential areas, and Gulf South's proposed measures to minimize and alleviate impacts and to maintain safety for residents during construction, are discussed in Section 3.8.3.1 under General Construction and Operational Impacts to Residences. Additional avoidance and mitigation measures Gulf South would use are included in its Upland Erosion Control, Revegetation, and Maintenance Plan (Plan), such as obeying construction right-of-way limits (Section I.B), maintaining access and safety at road crossings (Section III.D and IV.E), properly disposing of debris (III.E), conserving topsoil (Section IV.B), and cleaning up and restoring the land and landowner fences (Section V). Gulf South's Plan is identical to the FERC staff's Plan, which is available for viewing online at http://www.ferc.gov/industries/gas/enviro/uplndctl.pdf. Gulf South would also provide landowners and residents, prior to construction, a procedure for lodging complaints about Gulf South's construction impacts on their land, see Section 5.2 under Staffs Recommendations, Environmental Condition No. 11.

P2-2: Pipeline safety is addressed in Section 3.12 of the Final EIS. The available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation.

9

1 another look at that and make sure that we've got
2 all these kinds of issues covered in the DEIS, their
3 final.
4 MR. FLOURNOY: Okay.
5 MR. POLIT: Have you received a copy of
6 the draft?
7 MR. FLOURNOY: No.
8 MR. POLIT: Okay. I think I may have an
9 extra copy tonight. I will be glad to just go ahead
10 and give you that.
11 MR. FLOURNOY: Cool. And I have a
12 comment. Why would the landowners have to pay the
13 tax on the land? Do they have any control over it
14 -- over it?
15 Like in this question: Who pays the taxes
16 on the right of way of the land being used? It says
17 the landowner pay the taxes on the right of way
18 unless the local taxing authority grants relief.
19 How often do, like, the local tax
20 authority grant relief?
21 MR. POLIT: Well, I'm not really an expert
22 on that aspect of the project. I know that kind of
23 negotiation is between the company and the
24 landowner.
25 MR. FLOURNOY: Okay.

P2-3

P2-3: Property tax considerations and potential relief through reappraisal are discussed in Section 3.9.5 Property Values. The FERC staff cannot speculate on local governmental processes involved with obtaining tax relief from taxation authorities for land put under pipeline easement. Most previous land uses along the proposed pipeline route would be permitted to continue. Examples of certain types of restricted land uses following construction are mentioned in Section 3.8.3 General Impacts and Mitigation, and would include examples such as construction of house additions, garages, barns, sheds, patios and pools.

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1 MR. POLIT: What I see in the brochure is
2 that we don't -- I don't think we can really give --
3 or -- what do I want to say. There's compensation
4 that we consider in the easement negotiations itself
5 that's supposedly to take care of the fact that you
6 would still have to pay taxes on -- on that
7 property.
8 In some of the cases I think, for example,
9 like a county government, if they own the land
10 they'll get proceeds from tax revenues, but that's
11 because they're set up different ways in terms of
12 taxes. But they'll have the same kind of impact in
13 not being able to use the land the same way as -- as
14 they were before.
15 Of course, if you have impacts or farming
16 or grazing, that's kind of an impact that was
17 temporary and you go ahead and continue that use
18 once the pipeline has been put in the ground and
19 they have restoration up on a degradable level. But
20 other uses, for example, buildings, sheds, homes,
21 they can't on -- on the right of way.
22 MR. FLOURNOY: What happens if the Federal
23 Energy Regulatory Commission determines -- will
24 allow the pipeline company to abandon the right of
25 way? What happens to the equipment?

P2-3

P2-4

P2-4: Abandonment of above-ground pipeline equipment would generally be done by removing the equipment (facilities), restoring the land and relinquishing the easement. Abandonment of below ground pipeline facilities can be done either by removal or leaving the pipeline in the ground with proper capping procedures. Any abandonment performed by Gulf South must be done through an application and approval by the Commission.

1 MR. POLIT: You mean if the company wants
2 to abandon --
3 MR. FLOURNOY: The pipeline.
4 MR. POLIT: -- their pipeline in the
5 future?
6 MR. FLOURNOY: (Nods head affirmative.)
7 MR. POLIT: Well, there's -- that's part
8 of the act that we go by that makes the regulations.
9 They do have to file for that type of activity as if
10 it were a normal project because construction
11 may be involved. Sometimes when they abandon
12 it, technically they can either do it by just
13 leaving it in place or retiring it from service or
14 they can offer to take it out of the ground. And
15 I'm pretty sure, if I'm not mistaken, that decision
16 is usually --
17 MR. FLOURNOY: Contract.
18 MR. POLIT: -- up to the -- the landowner
19 if it's not some major activity. If -- if the
20 landowner has sections of pipe that they want taken
21 out, I know we've had several projects where it's
22 been the request of the landowner, abandonment by
23 taking it out. Then they have to restore it and, of
24 course, you get your previous use back.
25 MR. FLOURNOY: Okay. How long does the

12

pipeline installation sequence process take from the survey, the initial survey to the ending point of the gas --

MR. POLIT: Until they put in the gas service?

MR. FLOURNOY: Yeah.

MR. POLIT: You're asking how long the whole --

MR. FLOURNOY: The whole --

MR. POLIT: -- process of survey to complete construction --

MR. FLOURNOY: To get approved.

MR. POLIT: -- installation until service begins? Well, the beginning part of that is usually the more uncertain part because it -- typically, there's a several-month long process where the company is developing the project and developing the environmental information they need to file with the application. Then after it's filed things become a bit more predictable in terms of the schedule. So, for example, you may have surveys beginning as much as a year before they file, roughly there. It could be as quick as six months before they file is my guess. But, typically, it's around -- it seems like around a year or a bit more than that.

P2-5

P2-5: The period transpiring from the time a pipeline company begins project-related surveys until the FERC makes a decision on whether or not to authorize construction describes the current process of what the current project is undergoing. An example time period could include the pre-filing phase, filing of its project at the FERC, review of Gulf South's filed proposal, issuing a draft EIS with subsequent 45-day comment period, followed by FERC issuance of the Final EIS, followed by a 30-day no-action waiting period. If the project is approved, and all permits and conditions have been met, Gulf South would be granted commencement of construction that would last 3 to 9 months, at which time the FERC would issue authorization for gas transportation service.

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1 And then after filing, we do have, for
2 certain projects our regulations say we have to try
3 and do it within a certain number of months,
4 I believe it's between 8 and 12; and, actually,
5 that's what we've tried to do in the past is to not
6 let them drag on and on.
7 If there are issues or problems or we have
8 lack of environmental information, environmental
9 information that we need to process, then there's
10 going to be more give-and-take and it will draw out
11 that portion of the process.
12 And then once we get the environmental
13 document completed, we usually -- it's within a
14 month or so that the certificate will be issued and
15 that will allow the project to start being
16 constructed, and construction could take anywhere
17 from, you know, for a medium to large size project,
18 and I would consider this one a large size project,
19 it can take three to nine months of construction if
20 thing go well.
21 MR. FLOURNOY: What are the, like, the
22 requirements for a pipeline company to get a
23 certificate of approval from the Federal Energy
24 Regulatory Commission?
25 MR. POLIT: Well, I'm -- I'm not too sure.

P2-5

P2-6

P2-6: Gulf South must file all required information related to technical, environmental and business rate aspects in its application at the FERC. Environmental information in the form of resource reports are required to be provided by Gulf South, which FERC staff reviews for completeness, requesting additional resource-specific or site-specific information or clarification as needed, conducting additional information gathering on its own as needed, including gathering public comment. Based on this input, pursuant to the NEPA, FERC staff performs an analysis of the expected impacts of the project. This information is then summarized with FERC staff's proposed mitigation measures and is presented in the Final EIS to the Commission for their decision.

I can't go into that too much. I know environmentally speaking they have to have an. EIS which can be either environment assessment or full-blown environment impact statement --

MR. FLOURNOY: So they go and research.

MR. POLIT: -- and they have to provide us with the bulk of the environmental information. And if we don't like the fullness or the completeness of that part of the application, then we, you know, we send out letters all the time requesting more information. And then we make our site visits out in the field and we ask questions by having what we call scoping comment meetings before the project is filed. And also when we -- we've -- we issue a Draft EIS that gives us another opportunity. So we're collecting information all the while, but the bulk of the environmental information does come from the company.

MR. FLOURNOY: So how do you measure it?

MR. POLIT: I'm sorry?

MR. FLOURNOY: From the Federal Energy Regulatory Commission, how do you measure? How do you target the land or what land you're going to use?

MR. POLIT: Well, they actually provide

the route as well and our job is to review that route to make sure it's the least environmental impacted route. And, actually, we have a set of standardized procedures that I call the Plan and Procedures for Construction in a detailed -- actually, you know, they're required to stay within a certain right of way width and they're using standardized construction techniques. And on top of that we make them use our plan of procedures which involve clearing, minimizing disturbance while they're clearing, putting up erosion controls during construction, minimizing the way impact of the way they cross streams, coordinating with landowners trying to make the impact as -- as low as possible when they cross residential areas. And especially during restoration, we go out and inspect restoration to make sure they put the land back the way they found it.

MR. FLOURNOY: A representative from you -- you guys?

MR. POLIT: Yeah. FERC. FERC looks through the whole process. Even before they file, we're looking at the environmental information and then we file it and we put it into this report called the EIS. And then we handle, either

ourselves or through contractors, the inspection during construction and during restoration after construction.

MR. FLOURNOY: All right. That's it.

MR. POLIT: Okay. Well, thank you for your comment and questions.

All right. Could y'all hear that back there pretty much?

MS. SHOEMAKER: I'm struggling.

MR. POLIT: Okay. Usually, we get comments, but since there was such a small gathering I -- I decided to go ahead and, you know, answer some of those questions. I'm -- I'm real sorry I didn't try to repeat those questions to you.

MS. SHOEMAKER: No, I -- I'm having trouble hearing you.

MR. POLIT: Like now even? Okay. Okay. I'll try to remember to get closer. Are you Ms. Shoemaker?

MS. SHOEMAKER: Yes.

MR. POLIT: Okay. Well, we have -- are you Lillous Faye?

MS. SHOEMAKER: (Nods head affirmatively.)

MR. POLIT: You can go ahead and come up and make your comments if you would like to.

17

MS. SHOEMAKER: Can everyone hear me better without the microphone?

UNIDENTIFIED: Yes, ma'am.

MS. SHOEMAKER: Okay. The microphone, I think, is the problem.

MR. POLIT: Just as long as the court reporter can hear you, but I think we're all right. Is that correct?

COURT REPORTER: (Nods head affirmatively.)

MS. SHOEMAKER: My name -- I'm Lillous Faye Shoemaker, and my family grows timber, and we have got -- I notice on page 3-113 of this document, you list existing or proposed natural gas projects that would accumulative impact resources in this project area.

All right. We've got one, two, three, four; is that right? I know I'm personally involved with something called Midcontinent.

MR. POLIT: Midcontinental Connector.

MS. SHOEMAKER: The Southern Natural Gas Expansion Project and Gulf South.

MR. POLIT: Those are three different projects?

MS. SHOEMAKER: Three different projects

P2-7

P2-7: Based on conversation at the Heidelberg, Mississippi, comment meeting and consulting aerial alignment sheets, we determined that parcels under the Shoemakers' interest would be impacted at approximate mileposts 52.5 through 52.8 and 54.1.

The three projects that could potentially affect the Shoemaker's properties include the Southeast Expansion Project, the New Home Storage Project, and the Midcontinent Express Project. The Southern Natural Gas Expansion Project referred to is filed as the New Home Storage Project (FERC Docket No. PF07-005-000). The project would include a 9-mile pipeline which would cross the proposed Project at MP 47. The New Home Storage Project filing has been withdrawn. Cumulative impacts are discussed in Section 3.13.1.

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that are crossing my land.

MR. POLIT: I see.

MS. SHOEMAKER: Plus, occasionally, MDOT and the Airport Expansion. Private property is going to be non-existent if this keeps up. It is impossible to grow timber. The property that Gulf South wants to cross already has two existing pipelines on it. I understand they can't put them side by side. They want, like, at least an 80-foot strip between them.

What I'm ending up with is a piece of property that looks like it's being strip-mined. It's just cut all to pieces. You cannot harvest timber when it's cut up like that. You need blocks of the same age timber. Every time you cross a pipeline, it's a potential problem with heavy log trucks. So, I'm just saying it's getting very, very difficult to grow timber.

Now, timber growing is very environmentally friendly. I notice you list several endangered species in this book. But at the end most of them say -- let's see -- 42 federally listed and a number of state listed endangered or special status species would be potentially impacted by construction activities. But at the end result,

P2-8

P2-8: The proposed width between existing pipelines and Gulf South's proposed pipeline is the result of certain minimum safety and practical allowances that are required for pipeline placement and construction work area, described in Section 2.2.1. However, we are recommending in Section 2.2.1 that Gulf South limit its permanent right-of-way to a width of 50 feet instead of 60 feet as proposed. In addition, we are requiring Gulf South to use at least 10 feet of existing, adjacent pipeline rights-of-way during construction along Transco and Crosstex's right-of-way, unless justification is provided otherwise by Gulf South. Gulf South has indicated that it would redesign its temporary construction right-of-way to overlap 10 feet for almost all of its adjacent pipeline areas, with certain site-specific exceptions that it would file with the FERC. We believe that, given procedures Gulf South would use in locating existing pipelines, carefully conducted construction activities related to spoil placement in this overlap zone should allow Gulf South to safely install the pipeline. These recommendations should result in distances between Gulf South's proposed pipeline and adjacent existing pipelines to be reduced to between 40 and 55 feet. Finally, Gulf South has agreed to limit its two-tone construction work widths in rugged areas to a width of 150 feet or less, down from 170 to 190 feet.

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1 every time is, "Consequently, we believe that the
2 accumulative impacts to vegetation and wildlife
3 resources would be relatively minor." And that is
4 the ongoing thing for most of the things mentioned
5 in this document: "Yes, there's impact, but it's
6 going to be relatively minor."
7 Now, I believe on that page, 31-112,
8 somewhere I saw it does say if all these projects
9 cross the same property there could be trouble.
10 Well, there's already two existing pipelines. This
11 would be the third, and I notice there's several
12 more, 3-113. We've got several more planned for the
13 future.
14 Why does each company need their own
15 pipeline? Why can they not share the pipelines?
16 Or, at the very best, why can't we have a zone, like
17 city zoning, where "this is the pipeline zone." But
18 not pipeline, strip of land, that we're paying taxes
19 on; pipeline, strip of land.
20 He asked the question about the taxes, and
21 you said that maybe in the compensation phase that
22 would be addressed. How do you compensate for taxes
23 for the next 200 years when we don't know what the
24 tax base will be up front? And even if -- if they
25 think they're doing that, if you get -- the money

P2-8

P2-9

P2-10

P2-9: While the EIS does evaluate System Alternatives in Section 4.2, the projects mentioned by Ms. Shoemaker are each designed with different objectives which do not lend themselves to joint ownership or transportation arrangements.

P2-10: See response to Public Comment P2-3.

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will not be there to pay the tax, you know, it would be extremely difficult to hold on to whatever they've allocated for each year's taxes, and our property taxes are already extremely high.

All right. Also it would devalue my land drastically. This is a 320-acre block of land that -- I know right now in Jasper County we're probably not ready for a subdivision here, but the population is growing and I really had thought, you know, that would have made a nice place to subdivide. Well, nobody wants to live next to a pipeline.

P2-10

Did you say there was some representatives of Gulf South here?

MR. POLIT: Yes. We have three of them and you will be welcome to talk with any of us after we're --

MS. SHOEMAKER: Where would the company representatives be that --

MR. POLIT: They're sitting in the back there by a raise of hands.

(Representatives indicate by a raise of hands.)

MS. SHOEMAKER: Okay. From day one, this may not be a FERC thing, but from day one I think I have been harassed over this project.

P2-11

P2-11: Comment noted. FERC is actively interested in ensuring that, through its environmental report filing requirements and during construction inspections, that landowners are treated fairly and with respect during all phases of project development and construction. Gulf South's landowner complaint resolution procedure for construction activities is discussed in Section 2.5 and includes the use of FERC's Enforcement Hotline if Gulf South is unresponsive to a reasonable degree.

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While my husband was dying, I got frequent calls.
And then one day the Sheriff's Department
got a call requesting an escort out to the property
to make a survey. I don't think I am a dangerous
person. I've gotten pretty frustrated, but I don't
think I'm going to be sitting out there with a
machine gun, you know, to shoot the person who's
doing the survey. That really offended me. I saw
no need for that. I don't think I had said anything
that would lead them to think they needed an escort.
One day they will call me and say, "We're
going to talk to you. We're going to work this out.
We're talking about deep drilling." And then
I don't hear from them for a month or two until
I got another notice and they're thinking about
suing me, which it's always a different contact
person each time. But there's no consistency
whatsoever in their dealings with the landowners.
MR. POLIT: Okay.
MS. SHOEMAKER: And I am just very, very
frustrated with my government, because you do all
these projects but -- do you ever turn one down?
Do you ever turn a pipeline down? In your
experience, have you turned a pipeline request down?
MR. POLIT: No, FERC's -- I mean, FERC has

P2-12

P2-12: Whether FERC approves of denies a permit application for a natural gas pipeline project depends on a company's performance in demonstrating a public need for its proposed natural gas deliveries, the economic viability of a project, and whether the project poses unacceptable adverse environmental impacts to the natural and human environment, all of which are taken into consideration by the Commission in its decision. FERC has denied natural gas projects that have not met any of the criteria for public need.

a commission to typically -- to approve almost all the projects that -- that we receive. Our job here, though, is just to do the environmental impact analysis and then we give them the information and a lot of their decision is really driven by looking at what we consider public need and convenience of a project. And the public need is driven by market forces and a need for energy in the country and we're not at all privy to those decisions or deliberations. That's really the job of the five-member commission.

MS. SHOEMAKER: Did they ever turn one down?

MR. POLIT: Well, that's the one I'm talking about. It's very rare -- it's not a matter of turning down. It's making an application. It's hard for them to deny it if the company has provided all the requirements that they need to provide.

MS. SHOEMAKER: Well, then it just seems like it's rubber stamped on whatever they want to do.

MR. POLIT: Well, we hear your comments about that tonight.

MS. SHOEMAKER: Thank you.

MR. POLIT: Thank you. Ann, do you want

to come up, too, and make comments? You're welcome.

LILLOUS ANN SHOWEMAKER: Briefly, yes.

MR. POLIT: Okay.

LILLOUS ANN SHOWEMAKER: I'm Lillous Ann Shoemaker and --

MR. POLIT: All right.

LILLOUS ANN SHOWEMAKER: -- that's my mother, Lillous Faye Shoemaker, and I want to reiterate a lot of her comments. I'm not going to say them on the record; but, yeah, I think that was my father's funeral maybe when the police escort was -- was called, and very unnecessary.

I know I've had five or six calls from different pipeline companies since September. I was at the meeting here in September, and I'm going to have to quit practicing law and -- and -- and focus on pipeline companies trying to cross our land if this continues. And it's not just this tract. It's all of our tracts. And my mother is a widow now and her income depends on -- on our timberland.

And the EIS's are issued, I come to every public meeting there is in this area. I -- I attend and I listen to a lot of people, a lot of my clients even, as far as the noise. Yes, I said they could cross my land, but I didn't realize, you know,

24

I wouldn't be able to -- to sleep at night because of the activities going on. And it is a huge environmental impact.

I don't know if the pipeline representatives are actually trying to sleep in the areas that it's passing through. Very interesting. But, I -- I do believe that you are harassed by the pipeline companies. You voice your opinion. You write in your opinion, but the end result is going to be the same regardless. Pipelines are coming in as far as the market's concerned and the convenience. Based on my research, they're not using the capacity of the alliance they already have, more of a sharing situation.

P2-13

Yeah. Yeah, the market is there for it; but if we could just all in one instead of having five different ones across one tract of land; but I think the answer to that is money. It's not lucrative to do it that way.

MR. POLIT: Can -- can I ask you to name specific names of the projects that are -- that you're aware of that are across your particular land?

LILLOUS ANN SHOWEMAKER: Certainly. I'll try. I may have to refer to my notes. I've

P2-13: See response to Public Comment P2-9.

1 got Gulf South in at least two or three different
2 areas. This will be Jasper County and Smith County.
3 MS. SHOEMAKER: Uh-huh. (Affirmative
4 response.)
5 LILLOUS ANN SHOWEMAKER: And
6 Midcontinental Express.
7 MR. POLIT: Okay. So Gulf South in two or
8 three areas in Jasper and --
9 LILLOUS ANN SHOWEMAKER: Smith County.
10 MR. POLIT: Okay.
11 LILLOUS ANN SHOWEMAKER: And.
12 MS. SHOEMAKER: Southern Natural Gas who
13 is connecting with the salt zones (sic) in a
14 three-pronged pipelines coming out.
15 MR. POLIT: Where is that located?
16 MS. SHOEMAKER: The salt zones are in --
17 LILLOUS ANN SHOWEMAKER: Smith County.
18 MS. SHOEMAKER: -- Smith County,
19 I believe, and then they come straight up through
20 Jasper County. And I -- that's the only two folders
21 I have. But, you know, sometimes the construction
22 company calls you --
23 MR. POLIT: Right.
24 MS. SHOEMAKER: -- sometimes, so, who
25 knows.

26

MR. POLIT: Wasn't there Midcontinental that you are aware of? Because I believe that route is paralleling the one that covers my project and also farther back west toward Vicksburg --

MS. SHOEMAKER: Uh-huh. (Affirmative response.) Right.

MR. POLIT: -- at least that far, and I think that offset is -- I don't want to give any details -- but I think it's offset like six miles, so it's not exactly adjacent. But it's definitely -- I think we're having public comments meeting very soon on that project.

LILLOUS ANN SHOWEMAKER: And we did go to the meeting in, I guess open house, in Raleigh; Raleigh, Mississippi in Smith County, a couple of weeks ago and they had the maps out, "Okay. This is where it's going. It's going to clip your property in either Jasper or Smith," I believe that was Jasper County; and, "You've get it drawn a little wider than that."

"Oh, no, we're just going to -- to clip your land."

And then it's less than a week later they're calling to survey. They're actually doing more than clipping the land and -- and -- and I'm --

P2-14

P2-14: See Public Comment response to P2-11.

I'm fed up with it. They called me at my office and said, "Hey, we're sending you a package."

I said, "Okay." So I get it the next day, a certified letter. They're calling at 10:00 o'clock. "Did you get that package?"

"Yes." You know, I'm trying to earn a living. "I -- I've got it. It's on the floor. I haven't looked at it yet."

"Okay. Well, we'll call you back after you've had time to look at it."

One o'clock, there's another phone call. "Have you reviewed that yet?"

It -- it gets very frustrating. And -- and I worry about the -- the individuals that are not in my position that don't have time to sit at their desk and study various laws and -- and educate themselves on what is proper and what is improper. Like some of the -- like some of the elderly ladies I've spoken to, they just feel like, you know, this guy came to my house. He told me, you know, this is a great deal for me; sign this easement and you're good to go. And -- and it's just not -- not right regardless of the environmental impact on it.

MR. POLIT: Unfortunately, or as it may be, FERC really can't get too involved with the

P2-14 (cont'd)

dealings with the company and the landowner other than to say that -- where we connect with the landowner in the beginning is the scoping comment meetings and that's when the landowners are first discovering about the project and we know that there's a lot of confusing steps or phases that they have to go through.

We've tried to address, maybe five or six years ago, with -- with our landowner information packets that we try get companies to standardize, but that -- that's something that really is the limit of how we can address that problem.

LILLOUS ANN SHOWEMAKER: Okay.

MR. POLIT: And, you know, we -- we can always -- on -- even in a case by case specific situation, you can call us and we can call the company just to make sure that what we're seeing is going on out in the field and our meetings is actually happening for the most, from the part of the company, that we're trying to contact you and give you a reasonable time to respond and give you information about what your options are.

Sometimes we'll call them but -- and that actually speeds up a lot more during construction because then we have strictly environmental issues

that -- measures that they're supposed to follow as far as minimizing impact during construction and how well the right of way is restored, and, so, we get real active at that point too. We're actually out in the field accompanying people and we'll have relationships and you can always call during that time as well.

LILLOUS ANN SHOWEMAKER: Thank you.

MR. POLIT: But we have less of an impact when it comes time for easements and all that.

LILLOUS ANN SHOWEMAKER: Okay. Thank you.

MR. POLIT: Uh-huh. (Affirmative response.) I'm real sorry to hear -- was your father here at the last meeting --

LILLOUS ANN SHOWEMAKER: No.

MR. POLIT: -- in September?

LILLOUS ANN SHOWEMAKER: No.

MR. POLIT: Okay. I think you had a friend who may have been speaking on your behalf.

LILLOUS ANN SHOWEMAKER: Oh, she came and spoke.

MS. SHOEMAKER: I spoke.

MR. POLIT: Yes. I remember you. Just -- I know -- I know maybe we didn't spell it out enough in the draft, but we're fairly certain that

mechanized equipment, even if it's really heavy is -- should not affect operations or the safety of a pipeline. But I would be interested to see if you could write a written comment concerning what other aspects of timber harvesting or growing could be impacted by, you know, multiple pipelines that are buried across your land in terms of like growing the trees and harvesting them or building access roads. That's kind how we approached it last time and we tried to write some statements about that, but if you could provide us with some more comments, written, that way that would help.

If anyone else wants to come up and give more comments, that's about all I have for now.

(No response.)

MR. POLIT: We don't have any additional speakers. I think I'll go ahead and adjourn this meeting. Thank you all very much for coming. Thank you.

(Public Meeting Adjourned.)

1 CERTIFICATE OF COURT REPORTER
2 I, Harvey J. Rayborn, Court Reporter and Notary
3 Public in and for the County of Hinds, State of
4 Mississippi, hereby certify that the foregoing
5 pages, and including this page, contain a true and
6 correct transcript of the above-said public hearing,
7 as taken by me in the aforementioned matter at the
8 time and place heretofore stated, as taken by
9 stenotype and later reduced to typewritten form
10 under my supervision by means of computer-aided
11 transcription.
12 I further certify that I am not in the employ
13 of or related to any counsel or party in this matter
14 and have no interest monetary or otherwise, in the
15 final outcome of this proceeding.
16 Witness, my signature and seal this 19th day of
17 May, 2007.
18
19 _____
20 Harvey J. Rayborn, CSR #1274
21 My commission expires: 10/25/2008
22
23
24

FEDERAL ENERGY REGULATORY COMMISSION

DRAFT ENVIRONMENTAL IMPACT STATEMENT

PUBLIC COMMENT MEETING
FOR THE SOUTHEAST EXPANSION PROJECT

DOCKET NUMBER: CP07-32-000
MAY 10, 2007
7:00 P.M.

HELD AT THE
BUTLER CIVIC CENTER
110 NORTH ACADEMY AVENUE
BUTLER, ALABAMA

APPEARANCES:

JUAN POLIT
FERC Environmental Project Manager
Federal Energy Regulatory Commission
888 1st Street NE
Washington, D.C. 20426

KARI SUTTON
Program Manager
PBS&J
1250 Wood Branch Park Drive, Suite 300
Houston, TX 77079

PATRICIA TAYLOR, CSR
Court Reporter

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- - -

PROCEEDINGS

MR. POLIT: Good evening. I will go ahead and open tonight and if we have more people arrive later we might pause for a short while and let them arrive and then complete the meeting at that point, but I would like to go ahead and start.

My name is Juan Polit. I work for the Federal Energy Regulatory Commission. That's called FERC for short.

Welcome to tonight's Public Comment Meeting for the Southeast Expansion Project.

FERC is interested in soliciting your comments about the recently published draft Environmental Impact Statement. That's the draft EIS for short. And that was written concerning the environmental impacts associated with this project.

As the FERC environmental project manager, I have been in charge of preparing the environmental review of impacts expected from this project. And I also prepared the actual draft EIS.

With me also tonight is Kari Sutton of our contractor, PBS&J. She's helping write this

document and assisting me tonight.

FERC regards the contractor as an extension of FERC staff for the purpose of preparing the document and conducting these comment meetings.

We also have one company representative here.

And, finally, we have a court reporter to record comments for those folks who want to give us verbal comments.

This project was filed with FERC in Docket Number CP07-32 by Gulf South Pipeline Company.

The DEIS for the project was issued on April 13, 2007, and contains a deadline for written comments that is May 29.

We will address these concerns in the final EIS that FERC staff, myself included, will be preparing. The final EIS will summarize all of the expected environmental impacts of the project and will become part of the information that FERC will use in examining Gulf South's application.

Written or verbal comments that we hear tonight or will hear in the future will be given the same consideration as those comments

previously received by FERC.

Just to tell you about what the Commission itself will be doing, in addition to environmental issues the Commission will also consider gas transportation rates, engineering design, and the public need for the project.

When the Commission has completed their evaluation of all of these issues, including environmental, it will issue a decision about the Project in what is called an Order.

The purpose of this Public Comment Meeting tonight is to receive public verbal or written comments on the EIS. I am providing you an opportunity to comment on issues related to the construction and operation of the proposed route and the aboveground facility. What I am doing is asking you to identify any specific environmental concerns that you may have.

The format of this meeting is straightforward and simple. I will take comments only. This is not designed to be a question and answer session in front of the court reporter. I can't be discussing specific environmental issues with you. But if you prefer, I can take more detailed comments and we can have more discussion

and we can have those after the court reporter finishes. And we have some maps here to look at if you would like to as well. Anything we talk about today will be addressed in the final EIS.

Another way you can make specific comments, suggestions or other concerns about the environmental impacts from this project is to write them directly to the Secretary of the Commission. If you do so, try to make your comments really specific to where you live, put your name down and just mention the specific environmental questions you have or the comments or issues and whether they have to do with farming, grazing, timber management or safety, erosion, water quality or anything that you think may affect your property. That's the kind of comments that we are looking for.

I have got one sheet in the back with some handwritten instructions for you that you can use that you need to follow in order to send in written comments.

Some of you attending the meeting tonight may wish to be added to the environmental mailing list. What that is is people on that list are going to receive a copy of the final EIS. If you

got a draft EIS in the mail, that means you are already on the list. If you give a comment tonight or you write one in to us, you will also be added to that list and you will be receiving your final EIS in the mail.

I'd like to go ahead and begin taking comments from those who signed up tonight. Like I said, we have got a short panel tonight. After we finish, I'll break for a small break and you can choose to stay or if you like and I'll see if anybody else shows up and then I will adjourn tonight's meeting.

Why don't we have David Whiteside come up and you can go ahead and give your comments. And take your time.

MR. WHITESIDE: My name is David Whiteside. I'm with Williams Gas Pipeline. I'm in the land department with them out of Atlanta. And I was going through the DEIS and I just had a couple of comments and questions. And maybe, like you were saying, maybe after this we can get into some more detail on this.

Page 2-7, Table 2.2, 1-2, FERC shows the existing right-of-way for the three easement owners that Gulf South is paralleling. In that

9

1 Table, it shows Transco's right-of-way to be 125
2 feet in width and that is wrong.
3 MR. POLIT: What is it?
4 MR. WHITESIDE: Well, the problem is we
5 have about -- for the portion where Gulf South is
6 paralleling us, we have 144 agreements (sic) and 89
7 of those are open and undefined easements and the
8 remainder are defined. I just didn't want FERC to
9 think that all of our easements are 125 feet in
10 width because they are not.
11 The next thing was that in Section 2.3 in
12 the construction procedures it talks about the
13 processes for water body crossings and wetland
14 crossings and road and highway crossings but it
15 doesn't mention anything about the processes for
16 pipeline crossings. And Gulf South is going to
17 cross us three times.
18 I didn't know if that would come out in
19 another statement or where that would come out at.
20 It actually does -- the DEIS actually does mention
21 that Gulf South will be crossing Transco in the
22 previous Table but it never makes any distinction
23 about how they're going to cross us or if it's
24 either HDD or a bore or what.
25 And, also, Section 4.5, Route Variations.

P3-1

P3-2

P3-1: We recognize that the limits of Transco's permanent easement are not always stated as to their width. Gulf South is primarily concerned with the side of the easement that abuts their proposed pipeline right-of-way and is continuing to correspond with Transco for their construction plans on a location-specific basis to ensure construction does not impede on Transco's safe operation of its existing parallel pipelines. Gulf South indicated in a June 6, 2007 filing that its proposed pipeline location with respect to any existing undefined right-of-way easements may necessitate overlapping of previous rights with rights granted to Gulf South from the certificate, if approved by the FERC

P3-2: We have added a new Section 2.3.2.7 Utility Crossings, including the three locations where Transco's line is crossed, and procedures to be used specifying the distance of clearance Gulf South would use.

10

On page 4.5, Gulf South has identified 12 miscellaneous minor route various. On page 4.6, Table 4.41, they have a table that shows these different route variations and in that there is a route variation for .7 miles of the Transco pipeline due to forest. It goes on further to say that the reason for the variation is that Transco has a fifth pipeline in this area and it's needed to keep standard offset from Transco.

I guess we were wondering what is meant by a standard offset. And if we have a standard offset at this point we actually have a fifth line from around -- it starts around Gulf South milepost 99 and continues all of the way in to the meter station at milepost 110.6.

And if there is a standard offset for Transco, would that not apply for all of Transco's fifth line or does it only apply for this fifth line in this .7 mile stretch?

P3-3

And, then, in the conclusion, Section 5, FERC talks about the land use recreation special interest areas and visual resources. And in the first paragraph on page 5.5, FERC says: However, based on our experience and understanding of pipeline operations procedures and in order to minimize

P3-4

P3-3: See response to Comment P2-8. We encourage Gulf South and Transco to cooperate with the intention of FERC staff recommendations.

P3-4: The sentence was intended to refer to Gulf South's proposed permanent right-of-way that would abut but not cross over onto an existing utility's permanent right-of-way, and that the 10 feet of overlap would consist of Gulf South's construction right-of-way only. See our revised Section 2.2.1 **Pipeline Facilities** and Section 5.1.8 **Land Use, Recreation and Special Interest Areas, and Visual Resources** for summary statements concerning the overlap issue, as well as our response to Comment P2-8.

1 permanent impacts, we are recommending Gulf South
2 limit the width of its permanent right-of-way to
3 50 feet and evaluating using about ten feet of
4 overlap onto parallel natural gas pipeline
5 right-of-way.
6 I guess I don't quite understand what
7 that means. Is FERC implying that ten feet of
8 both pipelines should be shared?
9 MR. POLIT: The construction.
10 MR. WHITESIDE: That's only for the
11 temporary workspace?
12 MR. POLIT: Right.
13 MR. WHITESIDE: Okay. I thought that's
14 what that meant, but the way it was worded I didn't
15 know if FERC was implying that you would have
16 overlapping right-of-ways and I thought that might
17 be kind of a hard thing to do.
18 I think that's all of the comments I
19 have.
20 MR. POLIT: Okay. Are you going to be
21 providing any written comments? Actually, if we
22 can talk later and then everything you say I'll
23 just jot down in some notes and we'll summarize
24 them and make sure it gets in the record and make
25 sure we have that.

P3-4
(cont'd)

12

MR. WHITESIDE: I can. I mean, all I can do is supply this information to our Houston office and they will determine whether or not to make written comments. We only have one contact out of our corporation with FERC.

MR. POLIT: If you would like, I will be glad to go ahead and talk tonight.

MR. WHITESIDE: And that's fine, just to get some idea of these comments, that will be great.

That's all I had.

MR. POLIT: Thank you very much. Would anyone else like to give a comment?

MR. MORGAN: Yeah, I'd like to give some on preserving the water quality.

MR. POLIT: We'll be glad to hear it. Just go ahead and state your name.

MR. MORGAN: My name is Johnny Morgan. I own land in the proposed right-of-way. And I'm -- I've got a lake right in the proposed area that they are going to cross and I'm afraid that the erosion and the water quality of it is going to -- I've already had one incident with the Transcontinental and they're going to -- talking about using more space and getting further in it and I'm afraid

P3-5

P3-5: At approximate MP 110, the streams at the northern end of the pond will be open cut. The addition of Gulf South's pipeline along the south side of this pond at approximately MP 110 area would require construction disturbance to the slope and northern edge of this impoundment. Properly performed, Gulf South's use of erosion and sedimentation control measures contained in its proposed Plan and Procedures (discussed in Section 2.3.1 **General Pipeline Construction Procedures** and Section 2.3.2 **Specialized Pipeline Construction Procedures**) during construction should prevent storm-related influx of sediment into the pond. Such measures include completing crossings within 24 hours, installing erosion control devices immediately after disturbance, and proper maintenance throughout construction. Temporarily removed devices would be repositioned at the end of the work day or put in place if heavy precipitation is imminent. In addition, we are recommending that Gulf South install such measures as necessary to prevent just this sort of impact to impoundments located adjacent to its construction and permanent right-of-way. Finally, regular inspection of Gulf South's construction activities by FERC staff, its contractors, and through the proposed third party compliance monitoring program would ensure adequate adherence to these measures.

13

they're going to do more damage than they are supposed to as far as the erosion and the water quality.

And I also want to address the right-of-way. I read that about the overlapping thing. My question is since Gulf South -- I understand is going to be using Transco to transmit some of their gas?

Why can't they use a short or lesser right-of-way and use Transcontinental's pipeline as their workspace rather than consume so much right-of-way and workspace?

Y'all want us to be good neighbors, why can't all of y'all be good neighbors in that respect, too?

You know, if that pipeline was laid right against the existing Transco's right-of-way, they wouldn't need but 30 feet of right-of-way because you all is going to keep y'all's clean and they're going to keep their's clean and, you know, everybody could work a good project there. You know, it would take less right-of-way.

You know, I have asked Gulf South's engineers to come on my property and let us work out an agreement to this but I have not come up --

P3-6

P3-6: As for adding another line, it is still FERC's policy to route using pre-established corridors so that the least amount of new impacts to the natural environment occurs. Our recommendation would result in shared right-of-way to reduce impacts. Transco and Gulf South would not be sharing pipeline facilities.

nobody to bring someone there to discuss these problems. You know, that was my -- my main concern is erosion because there is deep sand there. And right now I've got barriers in place. Transco has got some in place of their own, you know, to stop it. And once they remove all of that, they are going to be inside my lake, you know. And according to them, they are talking about an open ditch crossing. You know, which is crossing an open ditch.

They're proposing 100 feet of workspace and then 70 feet more additional workspace which would put them right in the middle of the lake. And they've already got problems with erosion there because there's deep sand and agricultural and timberland around the lake, you know. And once they disturb it, I'm going to have a problem with erosion and they are, too.

MR. POLIT: What do you use your pond for?

MR. MORGAN: Huh?

MR. POLIT: What do you use your pond for?

MR. MORGAN: Well, we mostly use it for family recreation but we had thought in future

15

1 years to use it for trophy bass fishing, you know.
2 That's what we had proposed to do with it.
3 MR. POLIT: How big is your pond?
4 MR. MORGAN: It's a seven-acre lake. And
5 I'm proposing that they cut the right-of-way back
6 on my property. I can't see that bumping out and
7 everything on my property back to 30 feet since
8 most of it's going to be steep hills and kind of a
9 wetland area anyhow. And, you know, that would
10 stop erosion.
11 And, like I say, I asked the question
12 several times. I don't know how -- what kind of
13 an agreement y'all got but I want to know why they
14 can't use the existing right-of-way for workspace
15 and use a lesser right-of-way to put the line
16 there.
17 MR. POLIT: If you would like, I'd like
18 to actually get the maps out for you and just see
19 if you can point out where you are for me and what
20 you have down here.
21 MR. MORGAN: Well, a good aerial photo
22 will show it but, now, I don't know whether you've
23 got some or not.
24 MR. POLIT: I think we've got some.
25 MR. MORGAN: A good aerial will show the

P3-7

P3-7: See response to Comment P2-8.

lake and everything.

MR. POLIT: If you're on the route, we definitely have them.

MR. MORGAN: I already got five pipelines crossing me and this one will make six. And in my area that's over 200 foot of right-of-way or better. 250. And they got one proposed for the north side already. I'm going to have almost 300 foot of right-of-way and that's the reason I'm asking you for a lesser right-of-way.

MR. POLIT: Okay. I understand.

MR. MORGAN: And I believe that if they strip that land -- and there ain't going to be no way to protect it to keep the erosion and the water quality in that lake like it ought to be.

MR. POLIT: Okay. Thank you very much.

MR. PITTMAN: Can I come up?

MR. POLIT: Sure. Go ahead and come up. And then after you come up, we will go ahead and reconvene in about ten minutes and I will restart it up about 7:35 and we will see if we have anybody else show up.

MR. PITTMAN: My name is Chuck Pittman and I'm an Assistant District Manager over in Mississippi and this part of the Project that is

in Clark County will affect the area that I represent.

My only comment is kind of a followup to what David said about -- when he brought up the question about the 10-foot overlap. In some areas of those undefined right-of-ways that's going to bring working equipment within five feet of a loaded line. I just wanted to make sure you all understand that. That we may just have 15 foot that we keep maintained on the south side of that pipeline or the north side, depending on where they are at. So you could be within five feet of a loaded line with equipment working it.

MR. POLIT: Okay. Thank you.

Actually why don't we reconvene about 7:30. Thank you.

(Recess taken.)

MR. POLIT: Can I have your attention everyone? I guess we don't have anyone else who wants to speak tonight, so at this time I'd like to thank you all for coming.

I will adjourn this meeting. Thank you very much.

(THE PUBLIC COMMENT MEETING WAS ADJOURNED AT 7:32 P.M.)

1 C E R T I F I C A T E
2 STATE OF ALABAMA)
3 COUNTY OF CONECUH)
4 I do hereby certify that the above and
5 foregoing transcript of proceedings in the matter
6 aforementioned was taken down by me in machine
7 shorthand, and the questions and answers thereto
8 were reduced to writing under my personal
9 supervision, and that the foregoing represents a
10 true and correct transcript of the proceedings
11 given by said witness upon said hearing.
12 I further certify that I am neither of
13 counsel nor of kin to the parties to the action,
14 nor am I in anywise interested in the result of
15 said cause.
16
17 _____
18 PATRICIA TAYLOR, CSR, AL-CSR-396
19 COURT REPORTER,
20 NOTARY PUBLIC
21 STATE OF ALABAMA AT LARGE
22 My Commission Expires: 1/2/2009
23
24
25

David Felder

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Jackson Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213

ORIGINAL

April 23, 2007

Philis Posey, Acting Secretary
Federal Energy Regulatory Commission
888 First St., N.E., Room 1A
Washington, DC 20426

Dear Secretary Posey:

The U.S. Fish and Wildlife Service (Service) has received your draft environmental impact statement (EIS) dated April 2007, requesting initiation of formal section 7 consultation under the Endangered Species Act (ESA). The consultation concerns the possible effects of the proposed Southeast Expansion Project in Simpson, Smith, Jasper, and Clarke Counties, Mississippi; and Choctaw County, Alabama, on the federally listed threatened gopher tortoise (*Gopherus polyphemus*). All information required of you to initiate consultation was either included in your draft EIS or otherwise accessible for our consideration and reference.

Section 7 of the ESA allows the Service up to 90 calendar days to conclude formal consultation with your agency and an additional 45 calendar days to prepare our biological opinion. Therefore, we expect to provide you with our biological opinion no later than September 5, 2007. However, we anticipate this consultation will not require the maximum time permitted by Section 7.

If you have any questions, please feel free to contact this office at (601) 321-1139.

Sincerely,

David Felder
Fish and Wildlife Biologist

cc: Juan Polit, FERC
John Peconom, FERC

F1-1

F1-1: The Biological Opinion (BO) was dated on July 6, 2007. Section 3.7.1 describes the measures to comply with the BO.

Ronald M. Griffin

Unofficial FERC-Generated PDF of 20070525-0025 Received by FERC OSEC 05/23/2007 in Docket#: CP07-32-000

ORIGINAL

Philis J. Posey, Acting Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., 2A
Washington, DC 20426

FILED
OFFICE OF THE
SECRETARY
2007 MAY 23 P 1:23
FEDERAL ENERGY
REGULATORY COMMISSION

Ronald M. Griffin
Ben Cooper Estate
3941 South Wells Street
Chicago, IL 60609

May 18, 2007

Dear Madam:

I am the great grandson and heir to the Ben Cooper Estate. And I am speaking on behalf of my family regarding the proposed Gulf South Pipeline Southeast Expansion Project, Docket No. CP07-032-000.
These comments are in regards to the property that was granted to my great grandfather Ben during the United States Reconstruction Period, following the Civil War.
The property in question is located in Clark County, Quitman MS. The SE1/4 of NE1/4, Section19, Township 1 North, Range 15 East, less (1) Acre out of the NE corner, and containing 39Acres, more or less.

While it appears that by law, we may offer no objection to this development project, it is clear to us that the property in question will be significantly impacted in the following ways:
1. the overall devaluation of the property that is due to the installation of a natural gas pipeline.
2. the inability to market the property for other development purposes.
3. the lost of land that would otherwise serve to plant and harvest trees or other natural products for profit.
4. the proposed Gulf South Expansion Project easement and equipment encumbers only the land area specified in the project plans,
but it presents a continued threat of hazardous danger to the remaining of the entire land area.

C1-1

The proposed long term "land takeover" will in effect serve to provide for the good of many, but it will deprive the owners of their property rights provided for in the U.S. Constitution. And therefore, it is to be considered a violation that is tantamount to a breech of the U.S. Constitutional Law.

C1-2

It is our wish that these comments be taken into consideration as we move forward to negotiations with the Gulf South Co. Management.

Thank you.

Sincerely,

Ronald M. Griffin

C1-1: See response to Comment P2-3 for property tax issue and Comment P2-2 for the safety issue.

C1-2: The right of eminent domain is conferred by Section 7(h) of the Natural Gas Act.

U.S. Department of the Interior

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

TAKE PRIDE IN AMERICA

ER 07/302

May 21, 2007

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: Draft Environmental Impact Statement (DEIS) for the Southeast Expansion Project, FERC No. CP07-32-000, Simpson and Choctaw Counties; Richland Parish; Mississippi, Alabama, and Louisiana

Dear Ms. Bose:

The Department of the Interior has reviewed the DEIS for the Southeast Expansion Project, FERC No. CP07-32-000. We offer the following comments for your consideration.

The Strong River (MP 17.9) and the Chickasawhay River (MP 89.4) are designated by the National Park Service (NPS) as being listed on the Nationwide Rivers Inventory (NRI). Waterbodies included in the NRI are considered to possess one or more outstanding remarkable natural or cultural values judged to be of more than local or regional significance. Gulf South proposes to cross these rivers using Horizontal Directional Drilling. However, Gulf South has not yet completed consultations with the NPS regarding the potential project related effects to the subject NRI listed streams.

We concur with the recommendation in the DEIS that Gulf South consult with the NPS regarding its proposed pipeline crossings of the NRI listed Strong and Chickasawhay Rivers. We also concur with FERC's request for publication of these consultations and any plans to address any additional mitigation measures recommended by NPS. F2-1

We note that Section 7 consultation pursuant to the Endangered Species Act on the Louisiana portion of the project has been completed via the U.S. Fish and Wildlife Service (Service) letter to ENSR Corp. dated March 27, 2007. We recommend you use "not likely to adversely affect" for the effect determination on the Louisiana black bear, instead of "no effect" in the DEIS. Formal consultation on the impacts of the project to the gopher tortoise is currently underway with FERC. The Service anticipates a final biological opinion to be final in the coming weeks. F2-2

F2-1: Gulf South is currently consulting with the NPS in regard to its proposed pipeline crossings of the NRI-listed Strong and Chickasawhay Rivers. See Sections 3.2.2.1 and 3.2.2.3 for updated discussion and conditions reflecting Gulf South's consultations with the NPS and the MDFWP in its development of site-specific plans for use of the HDD procedure and for withdrawal of hydrostatic testwater.

F2-2: See response to Comment F1-1.

We appreciate the opportunity to review and comment on this DEIS. You can reach me at 404-331-4524, if you have any questions or concerns.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
FWS-R4, Atlanta
NPS-SERO, Atlanta
OEPC, Washington

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

ORIGINAL

Philis J. Posey, Acting Secretary
Federal Energy Regulatory Commission
888 First Street, N.E. Room 1A
Washington, DC 20426

Dear Ms. Posey: **Docket No: CP07-032-000**

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) for the Southeast Expansion Project to transport 1.7 billion cubic feet per day of natural gas from production fields in eastern Texas. The proposed action includes the construction of 111 miles of a 42-inch diameter pipeline beginning in Simpson County, Mississippi, to Choctaw County, Alabama, and three new compressor stations, the Delhi, Harrisville, and Destin Compressor Stations, located in Richland County, Louisiana; Simpson County, Mississippi; and Choctaw County, Alabama.

The following comment is offered on the Draft Statement:

Please correct in the Final EIS the National Ambient Air Quality Standards (NAAQS) table on p.3-91 to reflect the new Particulate Matter (PM) standards recently promulgated by EPA. On October 17, 2006, EPA revised the NAAQS for PM2.5 and PM10 (71FR61236). The correct standards are: F3-1

PM10: annual standard has been revoked; 24-hour standard unchanged.
PM2.5: annual standard unchanged: 24-hour standard dropped to 35 ug/m3.

EPA rates the DEIS as "**LO,**" i.e., EPA has "**Lack of Objections**" to the proposed action as described in the DEIS. Our classification will be published in the Federal Register according to our responsibility under Section 309 of the Clean Air Act to inform the public of our views on proposed Federal actions. If you have any questions, please contact Mike Jansky of my staff at 214-665-7451or by e-mail at jansky.michael@epa.gov.

EPA appreciates the opportunity to review the DEIS. Please send our office two copies of the FEIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460. F3-2

Sincerely yours,

Cathy Gilmore

Cathy Gilmore, Chief
Office of Planning and
Coordination (6EN-XP)

Internet Address (URL) • http://www.epa.gov
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F3-1: Table 3.11.1-1, National Ambient Air Quality Standards in the Final EIS, has been revised to reflect the new Particulate Matter standards.

F3-2: Two copies of the Final EIS will be mailed to your office.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Gulf South Pipeline Company, LP's
Proposed Southeast Expansion Project
Docket No. CP07-032-000

COMMENT AND OBJECTION TO DRAFT
ENVIRONMENTAL IMPACT STATEMENT

COMES NOW First Presbyterian Church of Jackson, Mississippi ("First Presbyterian"), a Mississippi non-profit corporation, and files this its comment and objection to the Environmental Impact Statement and proposed Harrisville, Mississippi compressor station to be built as part of the subject expansion project and in support thereof would show unto the Commission the following:

1.

First Presbyterian as part of its ministry owns and operates Twin Lakes Camp and Conference Center ("Twin Lakes") located at 155 Milner Road in Florence, Mississippi. Twin Lakes serves as a summer camp for youth providing activities such as swimming, biking, horseback riding, riflery and archery. It also serves as a locale for retreats, conferences, family getaways and other church events and provides a quiet rural setting for outdoor activities of all kind.

2.

The proposed compressor station to be built at Harrisville, Mississippi as part of the Proposed Expansion Project would be located approximately 2000 feet from the nearest activity area at Twin Lakes. See map attached hereto as Exhibit "A". It appears, however, that the Twin } C2-1

C2-1: See response to Comment P1-1.

Lakes property was not considered as part of the Environmental Impact Statement (EIS) prepared for the Commission. Section 3.11.2.2 of the EIS states:

> The Harrisville Compressor Station would be located in Simpson County, Mississippi, approximately 9 miles south of Florence, Mississippi. The land surrounding the site consists primarily of forest. The nearest NSAs are residences 4,200 feet east (NSA # 1), 5,600 feet south-southeast (NSA # 2), and 4,800 feet northwest (NSA # 3) of the proposed station. On September 20, 2006, Gulf South conducted an ambient sound-level survey at the NSAs. Noise sources during the sound-level survey included traffic on local roads, insects, birds, and wind. Measured noise at NSA # 1 was determined to be 37.1 dBA, with a calculated Ldn of 43.5 dBA. At NSA # 2, measured noise was determined to be 42.1 dBA, with a calculated Ldn of 48.5 dBA. At NSA # 3, measured noise was determined to be 38.2 dBA, with a calculated Ldn of 44.6 dBA.

3.

The Twin Lakes property is some 2200 feet **closer** to the proposed compressor station than the nearest NSA (noise sensitive areas) utilized in the EIS. Clearly, Twin Lakes qualifies as an NSA. As Section 3.11.2.2 notes:

> NSAs include residences, schools and daycare facilities, hospitals, long-term care facilities, places of worship, libraries, and **parks and recreational areas specifically known for their solitude and tranquility, such as wilderness areas** [emphasis added].

4.

It is reasonable to assume that given the increased proximity to Twin Lakes the decibel level projections would be even higher than they were at the NSAs utilized in the EIS. Those projections were already quite high:

> The expected Ldn at NSA # 1 closest to the Harrisville Compressor Station would be 42.1 dBA due to sound generated by operation of the new station. When combined with the existing ambient noise level, the Ldn would be about 45.9 dBA at NSA # 1. The estimated Ldn at NSA # 2 is 38.4 dBA and 48.9 dBA when combined with existing ambient noise levels. The estimated Ldn at NSA # 3 is 40.4 dBA and 46.0 dBA when combined with existing ambient noise levels.
>
> Section 3.11.2.2 of EIS

C2-1 (cont'd)

Some 2200 feet closer, one would expect the levels to be near or above the maximum day-night sound level (Ldn) of 55 dBA established by 18 CFR 380.12. See 380.12(k)(v)(A) ("The noise attributable to any new compressor station, compressor added to an existing station or any modification, upgrade or update of an existing station, must not exceed a day-night sound level (Ldn) of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences).") For a place whose primary attribute is silence and solitude, this is unacceptable.[1]

5.

First Presbyterian therefore objects to the compressor station being located where presently planned. The station should be moved so as not to interfere with the "solitude and tranquility" that campers and guests of Twin Lakes have enjoyed for generations. Alternatively, additional surveys should be conducted using the Twin Lakes property as an NSA with Gulf South submitting a supplemental report on changes it intends to make to provide additional noise control as necessary.

Dated this the 29th day of May, 2007.

Respectfully submitted,

FIRST PRESBYTERIAN CHURCH OF JACKSON, MISSISSIPPI

By: /s/ C. Stephen Stack, Jr.
C. Stephen Stack, Jr., MSB # 10768

[1] Given the nature of the Twin Lakes property and the potential disruption to the experiences for which the camp was founded, First Presbyterian would submit that the noise level not only should be less than the maximum Ldn of 55 dBA but far below it.

OF COUNSEL:
J. Kevin Watson (MSB # 6991)
C. Stephen Stack, Jr. (MSB # 10768)
WATSON & JONES, P.A.
Post Office Box 23546
Jackson, Mississippi 39225
Telephone: (601) 939-8900
Facsimile: (601) 932-4400

CERTIFICATE OF SERVICE

I, C. Stephen Stack, Jr., the undersigned attorney, do hereby certify that I have electronically filed the above and foregoing document with the FERC using the EFILE system, and served a true and correct copy of the above and foregoing document via U.S. Mail, to the following counsel of record:

James L. Halford, Esq.
Brunini, Grantham, Grower & Hewes
1400 Trustmark Building
P.O. Drawer 119
Jackson, MS 39205
ATTORNEY FOR GULF SOUTH PIPELINE COMPANY, LP

This the 29th day of May, 2007.

/s/ C. Stephen Stack, Jr._____
C. Stephen Stack, Jr.

APPENDIX M

SUBJECT INDEX

APPENDIX M

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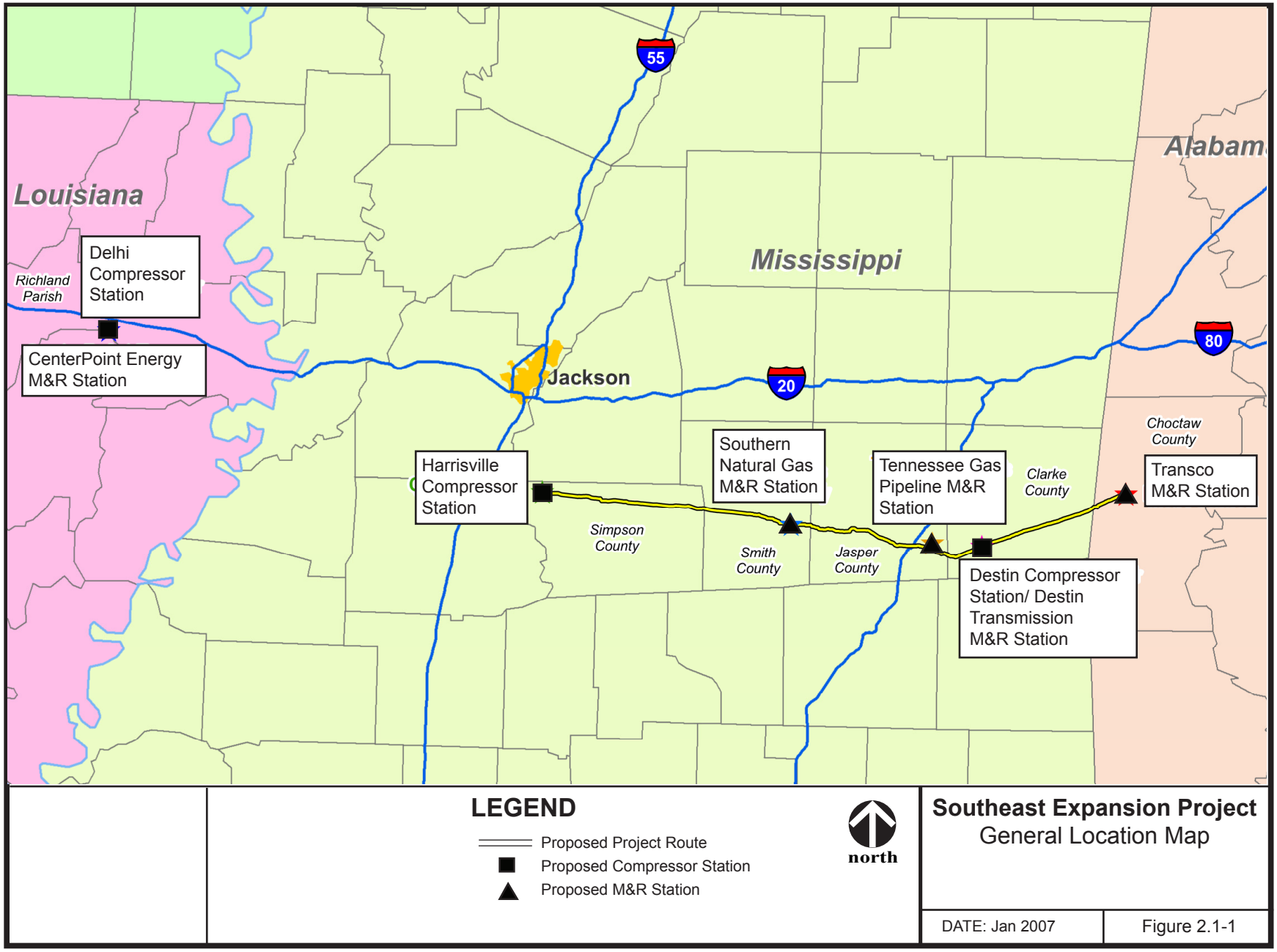
Louisiana
Mississippi
Alabam
Richland Parish
Delhi Compressor Station
CenterPoint Energy M&R Station
Jackson
55
20
80
Harrisville Compressor Station
Simpson County
Southern Natural Gas M&R Station
Smith County
Jasper County
Tennessee Gas Pipeline M&R Station
Clarke County
Choctaw County
Transco M&R Station
Destin Compressor Station/ Destin Transmission M&R Station
LEGEND
Proposed Project Route
Proposed Compressor Station
Proposed M&R Station
north
Southeast Expansion Project
General Location Map
DATE: Jan 2007
Figure 2.1-1

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