

# ELBA III PROJECT

## DRAFT ENVIRONMENTAL IMPACT STATEMENT

### TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>ES-I</b>
PROPOSED ACTION.....	ES-II
PUBLIC INVOLVEMENT.....	ES-IV
PROJECT IMPACTS .....	ES-VI
ALTERNATIVES CONSIDERED.....	ES-VIII
MAJOR CONCLUSIONS.....	ES-IX
<b>1.0 INTRODUCTION.....</b>	<b>1-1</b>
1.1 PROJECT PURPOSE AND NEED .....	1-4
1.2 PURPOSE AND SCOPE OF THIS STATEMENT .....	1-4
1.2.1 <i>FERC</i> .....	1-5
1.2.2 <i>U.S. Coast Guard</i> .....	1-6
1.2.3 <i>U.S. Army Corps of Engineers</i> .....	1-8
1.3 PUBLIC REVIEW AND COMMENT.....	1-9
1.4 NON-JURISDICTIONAL FACILITIES .....	1-13
1.5 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS .....	1-14
<b>2.0 DESCRIPTION OF PROPOSED ACTION .....</b>	<b>2-1</b>
2.1 EXISTING FACILITIES .....	2-1
2.1.1 <i>Terminal Expansion</i> .....	2-1
2.1.2 <i>Elba Express Pipeline</i> .....	2-5
2.2 PROPOSED FACILITIES.....	2-5
2.2.1 <i>Terminal Expansion</i> .....	2-5
2.2.2 <i>Elba Express Pipeline</i> .....	2-7
2.3 LAND REQUIREMENTS .....	2-8
2.3.1 <i>Terminal Expansion</i> .....	2-9
2.3.2 <i>Elba Express Pipeline</i> .....	2-9
2.3.2.1 ROW and Temporary Workspaces .....	2-12
2.3.2.2 Access Roads.....	2-13
2.3.2.3 Warehouse/Storage Yards.....	2-13
2.3.2.4 Aboveground Facilities.....	2-13
2.4 CONSTRUCTION SCHEDULE.....	2-13
2.5 ENVIRONMENTAL COMPLIANCE .....	2-13
2.6 CONSTRUCTION PROCEDURES .....	2-15
2.6.1 <i>Terminal Expansion</i> .....	2-15
2.6.2 <i>Elba Express Pipeline</i> .....	2-16
2.6.3 <i>Special Construction Procedures</i> .....	2-21
2.7 OPERATION AND MAINTENANCE PROCEDURES .....	2-24
2.7.1 <i>Terminal Expansion</i> .....	2-24
2.7.2 <i>Elba Express Pipeline</i> .....	2-24
2.8 SAFETY CONTROLS .....	2-26
2.8.1 <i>Terminal Expansion</i> .....	2-26
2.8.2 <i>Elba Express Pipeline</i> .....	2-26
2.9 FUTURE PLANS AND ABANDONMENT .....	2-27
<b>3.0 ALTERNATIVES .....</b>	<b>3-1</b>
3.1 NO ACTION OR POSTPONED ACTION.....	3-1
3.2 LNG TERMINAL FACILITY ALTERNATIVES.....	3-4
3.2.1 <i>Existing LNG Import Terminal Systems</i> .....	3-4

3.2.2	<i>LNG Terminal Site Alternatives</i> .....	3-6
3.2.3	<i>Offshore Terminal Alternatives</i> .....	3-8
3.2.4	<i>Conclusions of Offshore Berth Alternatives</i> .....	3-15
3.3	<b>ELBA EXPRESS PIPELINE ALTERNATIVES</b> .....	3-16
3.3.1	<i>Pipeline System Alternatives</i> .....	3-16
3.3.2	<i>Pipeline Route Alternatives</i> .....	3-16
3.3.2.1	Southern Segment.....	3-16
3.3.2.2	Northern Segment.....	3-17
3.3.3	<i>Pipeline Route Variations</i> .....	3-24
3.3.4	<i>Other Pipeline Issues</i> .....	3-30
3.3.5	<i>Aboveground Facility Site Alternatives</i> .....	3-31
<b>4.0</b>	<b>ENVIRONMENTAL IMPACT ANALYSIS</b> .....	<b>4-1</b>
4.1	<b>GEOLOGIC RESOURCES</b> .....	4-1
4.1.1	<i>Geologic Setting</i> .....	4-1
4.1.2	<i>Mineral Resources</i> .....	4-3
4.1.3	<i>Geologic Hazards</i> .....	4-4
4.1.4	<i>Paleontology</i> .....	4-8
4.2	<b>SOILS</b> .....	4-9
4.2.1	<i>Soil Limitations</i> .....	4-9
4.2.2	<i>Erosion Control Plans</i> .....	4-11
4.2.3	<i>Soil Resources</i> .....	4-12
4.3	<b>WATER RESOURCES</b> .....	4-17
4.3.1	<i>Groundwater</i> .....	4-17
4.3.2	<i>Floodplains</i> .....	4-22
4.3.3	<i>Surface Water</i> .....	4-23
4.3.4	<i>Sediments</i> .....	4-34
4.4	<b>WETLANDS</b> .....	4-35
4.4.1	<i>Affected Wetlands</i> .....	4-36
4.4.2	<i>Wetland Construction Procedures</i> .....	4-38
4.5	<b>VEGETATION</b> .....	4-41
4.5.1	<i>Vegetation Resources</i> .....	4-41
4.5.2	<i>Noxious Weeds</i> .....	4-44
4.5.3	<i>Vegetation Communities of Special Concern</i> .....	4-45
4.6	<b>WILDLIFE AND AQUATIC RESOURCES</b> .....	4-45
4.6.1	<i>Wildlife Habitats</i> .....	4-45
4.6.1.1	Managed and Sensitive Wildlife Areas.....	4-51
4.6.2	<i>Aquatic Resources</i> .....	4-52
4.6.2.1	Fish and Invertebrates.....	4-54
4.6.2.2	Construction Impacts to Aquatic Resources .....	4-54
4.6.2.3	Operational Impacts to Aquatic Resources.....	4-58
4.6.3	<i>Essential Fish Habitat</i> .....	4-61
4.7	<b>THREATENED, ENDANGERED AND OTHER SPECIAL STATUS SPECIES</b> .....	4-62
4.7.1	<i>Federally Listed Threatened and Endangered Species</i> .....	4-64
4.7.2	<i>State-Listed Threatened, Endangered or Species of Concern</i> .....	4-90
4.8	<b>LAND USE, RECREATION, AND VISUAL RESOURCES</b> .....	4-99
4.8.1	<i>Land Use</i> .....	4-99
4.8.1.1	Land Use Requirements.....	4-99
4.8.1.2	Land Use Impacts and Mitigation.....	4-107
4.8.2	<i>Landowner and Easement Requirements</i> .....	4-110
4.8.3	<i>Proposed Alternative Measures to the FERC Plan</i> .....	4-111
4.8.4	<i>Residences and Planned Developments</i> .....	4-111
4.8.5	<i>Recreation and Special Interest Areas</i> .....	4-115
4.8.6	<i>Visual Resources</i> .....	4-119
4.8.7	<i>Coastal Zone Management</i> .....	4-120
4.9	<b>SOCIOECONOMICS</b> .....	4-122
4.9.1	<i>Population</i> .....	4-122

4.9.2	<i>Economy and Employment</i> .....	4-124
4.9.2.1	Economic Impacts to Forestry .....	4-126
4.9.3	<i>Local Taxes and Government Revenue</i> .....	4-127
4.9.4	<i>Housing</i> .....	4-127
4.9.5	<i>Public Services</i> .....	4-128
4.9.6	<i>Transportation</i> .....	4-129
4.9.6.1	Marine Traffic Impacts .....	4-130
4.9.7	<i>Environmental Justice</i> .....	4-134
4.10	CULTURAL RESOURCES .....	4-137
4.10.1	<i>Cultural Resource Surveys</i> .....	4-138
4.10.2	<i>Unanticipated Discoveries Plan</i> .....	4-140
4.10.3	<i>Native American Consultation</i> .....	4-140
4.10.4	<i>Compliance with the NHPA</i> .....	4-141
4.11	AIR QUALITY AND NOISE .....	4-142
4.11.1	<i>Air Quality</i> .....	4-142
4.11.1.1	Regional Climate .....	4-142
4.11.1.2	Existing Air Quality.....	4-142
4.11.1.3	Existing Facility Emissions .....	4-145
4.11.1.4	Regulatory Requirements for Air Quality.....	4-147
4.11.1.5	Air Emissions Impacts .....	4-152
4.11.1.6	Mitigation .....	4-163
4.11.2	<i>Noise</i> .....	4-164
4.11.2.1	Existing Noise Environment .....	4-165
4.11.2.2	Construction Noise .....	4-168
4.11.2.3	Operational Noise .....	4-171
4.12	RELIABILITY AND SAFETY.....	4-174
4.12.1	<i>LNG Hazards</i> .....	4-175
4.12.2	<i>Cryogenic Design and Technical Review</i> .....	4-177
4.12.3	<i>Siting Requirements – Thermal and Dispersion Exclusion Zones</i> .....	4-183
4.12.4	<i>LNG Carrier Safety</i> .....	4-191
4.12.4.1	History .....	4-192
4.12.4.2	LNG Carrier Construction .....	4-193
4.12.4.3	Hazards.....	4-195
4.12.4.4	LNG Carrier Transit to the Elba Island Terminal .....	4-205
4.12.4.5	Requirements for LNG Operations in the Savannah River .....	4-209
4.12.5	<i>Emergency Response and Evacuation Planning</i> .....	4-215
4.12.6	<i>Conclusions on Marine Traffic Safety</i> .....	4-216
4.12.7	<i>Terrorism and Security Issues</i> .....	4-216
4.12.8	<i>Pipeline Safety Standards</i> .....	4-218
4.12.9	<i>Pipeline Accident Data</i> .....	4-223
4.12.10	<i>Impacts on Public Safety</i> .....	4-226
4.13	CUMULATIVE IMPACTS .....	4-228
4.13.1	<i>Geology</i> .....	4-233
4.13.2	<i>Soils</i> .....	4-233
4.13.3	<i>Water Resources</i> .....	4-234
4.13.4	<i>Wetlands</i> .....	4-235
4.13.5	<i>Vegetation and Wildlife</i> .....	4-236
4.13.6	<i>Aquatic Resources</i> .....	4-236
4.13.7	<i>Special Status Species</i> .....	4-237
4.13.8	<i>Land Use and Visual Resources</i> .....	4-237
4.13.9	<i>Socioeconomics</i> .....	4-238
4.13.10	<i>Marine Transportation</i> .....	4-238
4.13.11	<i>Land Transportation</i> .....	4-239
4.13.12	<i>Cultural Resources</i> .....	4-239
4.13.13	<i>Air Quality and Noise</i> .....	4-239
4.13.14	<i>Reliability and Safety</i> .....	4-240
4.13.15	<i>Conclusion</i> .....	4-241

<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>5-1</b>
5.1	CONCLUSIONS OF THE ENVIRONMENTAL ANALYSIS .....	5-1
5.2	IMPACT SUMMARY .....	5-2
5.3	SUMMARY OF ALTERNATIVES CONSIDERED.....	5-9
5.4	SIGNIFICANT UNAVOIDABLE IMPACTS.....	5-10
5.5	FERC STAFF'S RECOMMENDED MITIGATION.....	5-11

## **LIST OF APPENDICES**

APPENDIX A	DRAFT EIS DISTRIBUTION LIST
APPENDIX B	MAPS OF ELBA EXPRESS PIPELINE, ABOVEGROUND FACILITY, AND WAREHOUSE/STORAGE YARD LOCATIONS
APPENDIX C	LIST OF EXISTING PUBLIC AND PRIVATE TEMPORARY ACCESS ROADS FOR THE ELBA EXPRESS PIPELINE
APPENDIX D	SOUTHERN LNG AND EEC's PROJECT-WIDE SPILL PLAN, WASTE MANAGEMENT PLAN, AND CONTAINER MANAGEMENT POLICY
APPENDIX E	EEC's UPLAND EROSION CONTROL, REVEGETATION AND MAINTENANCE PLAN
APPENDIX F	EEC's WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES
APPENDIX G	LIST OF PRIVATE WATER WELLS WITHIN 150 FEET OF THE ELBA EXPRESS PIPELINE PROJECT
APPENDIX H	LIST OF WATERBODIES Affected BY THE ELBA EXPRESS PIPELINE PROJECT
APPENDIX I	LIST OF WETLANDS Affected BY THE ELBA EXPRESS PIPELINE PROJECT
APPENDIX J	ESSENTIAL FISH HABITAT ASSESSMENT
APPENDIX K	VESSEL STRIKE AVOIDANCE MEASURES AND INJURED OR DEAD PROTECTED SPECIES REPORTING
APPENDIX L	COAST GUARD LETTER OF INTENT AND WATERWAY SUITABILITY REPORT
APPENDIX M	REFERENCES
APPENDIX N	LIST OF PREPARERS AND REVIEWERS

## LIST OF TABLES

TABLE ES-1	SUMMARY OF ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION OF THE ELBA III PROJECT.....	ES-VI
TABLE 1.3-1	ISSUES IDENTIFIED AND COMMENTS RECEIVED DURING THE PUBLIC SCOPING PROCESS FOR THE ELBA III PROJECT.....	1-11
TABLE 1.5-1	MAJOR PERMITS, APPROVALS, AND CONSULTATIONS.....	1-15
TABLE 2.2-2	ABOVEGROUND PIPELINE FACILITIES.....	2-8
TABLE 2.3-1	LAND REQUIREMENTS FOR THE ELBA III PROJECT.....	2-9
TABLE 2.7-1	FEDERAL SITING AND DESIGN REQUIREMENTS FOR LNG FACILITIES .....	2-25
TABLE 3.2-1	ENGINEERING AND ECONOMIC COMPARISON OF THE PROPOSED TERMINAL EXPANSION PROJECT TO OFFSHORE TERMINAL ALTERNATIVES .....	3-12
TABLE 3.2-2	COMPARISON OF ENVIRONMENTAL IMPACTS AMONG THE TERMINAL EXPANSION PROJECT AND THE TWO BERTHING ALTERNATIVES .....	3-13
TABLE 3.3-1	COMPARISON OF MAJOR ROUTE ALTERNATIVES FOR THE NORTHERN SEGMENT OF THE ELBA EXPRESS PIPELINE .....	3-17
TABLE 3.3-2	ENVIRONMENTAL COMPARISON OF PARTIAL COLLOCATION ROUTE ALTERNATIVES TO THE PROPOSED ROUTE .....	3-22
TABLE 3.3-3	LITTLE RIVER VARIATION COMPARISON.....	3-25
TABLE 3.3-4	BEAVERDAM CREEK VARIATION COMPARISON .....	3-28
TABLE 3.3-5	COLDWATER CREEK VARIATION COMPARISON .....	3-30
TABLE 4.1-1	SURFICIAL MATERIAL PRESENT AT ELBA ISLAND TERMINAL EXPANSION SITE.....	4-2
TABLE 4.2.1-1	SUMMARY OF SOILS LIMITATIONS – ELBA EXPRESS PIPELINE .....	4-10
TABLE 4.2.1-2	SUMMARY OF SOILS LIMITATIONS – ELBA EXPRESS ABOVEGROUND FACILITIES .....	4-11
TABLE 4.3-1	HYDROSTATIC TEST WATER VOLUMES FOR THE ELBA EXPRESS PIPELINE .....	4-33
TABLE 4.5-1	ESTIMATED IMPACTS ON VEGETATION COMMUNITIES ALONG THE ELBA EXPRESS PIPELINE (ACRES) .....	4-42
TABLE 4.6-1	RECREATIONAL FISH SPECIES NEAR THE PROPOSED TERMINAL EXPANSION FACILITIES .....	4-52
TABLE 4.7-1	FEDERAL AND STATE LISTED SPECIES ELIMINATED FROM DETAILED NEPA ANALYSIS FOR THE PROPOSED TERMINAL EXPANSION AND ELBA EXPRESS PIPELINE .....	4-65
TABLE 4.7-2	FEDERAL AND STATE LISTED SPECIES POTENTIALLY OCCURRING IN THE VICINITY OF THE PROPOSED TERMINAL EXPANSION AND ELBA EXPRESS PIPELINE .....	4-67
TABLE 4.7-3	RECORDED OCCURRENCES OF FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES WITHIN 1,500 FEET OF THE ELBA EXPRESS PIPELINE.....	4-70
TABLE 4.8-1	ACRES OF LAND AFFECTED BY CONSTRUCTION AND OPERATION OF THE PROPOSED PROJECT .....	4-100
TABLE 4.8.2	LAND REQUIREMENTS FOR THE ANCILLARY FACILITIES ASSOCIATED WITH THE ELBA EXPRESS PIPELINE.....	4-102
TABLE 4.8-3	ROW CONFIGURATIONS FOR THE ELBA EXPRESS PIPELINE .....	4-105
TABLE 4.8-4	RESIDENCES AND STRUCTURES WITHIN 50 FEET OF THE ELBA EXPRESS PIPELINE CONSTRUCTION ROW .....	4-113
TABLE 4.8-5	PLANNED DEVELOPMENTS CROSSED OR WITHIN 0.25 MILE OF THE ELBA EXPRESS PIPELINE CONSTRUCTION ROW .....	4-114
TABLE 4.8-6	RECREATIONAL AND PUBLIC INTEREST AREAS CROSSED OR WITHIN 0.25 MILE OF THE PROPOSED ELBA EXPRESS PIPELINE.....	4-117
TABLE 4.8-7	COE PROJECT AND MITIGATION LANDS CROSSED BY THE ELBA EXPRESS PIPELINE .....	4-118
TABLE 4.9-1	EXISTING SOCIOECONOMIC CONDITIONS IN THE VICINITY OF THE TERMINAL EXPANSION....	4-123
TABLE 4.9-2	EXISTING SOCIOECONOMIC CONDITIONS IN THE VICINITY OF THE ELBA EXPRESS PIPELINE .	4-124
TABLE 4.9-3	2000 HOUSING CHARACTERISTICS IN CHATHAM COUNTY .....	4-128
TABLE 4.9-4	SUMMARY OF VESSEL CALLS TO THE PORT TO BE HANDLED BY THE SAVANNAH PILOTS ASSOCIATION OVER THE NEXT 50 YEARS .....	4-131
TABLE 4.9-5	A COMPARISON OF RACIAL/ETHNIC MIX AND INCOME STATISTICS FOR CHATHAM COUNTY .....	4-135
TABLE 4.9-6	A COMPARISON OF RACIAL/ETHNIC MIX AND INCOME STATISTICS WITHIN THE ELBA EXPRESS PIPELINE CONSTRUCTION CORRIDOR .....	4-137

TABLE 4.11.1-1	NATIONAL AMBIENT AIR QUALITY STANDARDS .....	4-144
TABLE 4.11.1-2	SUMMARY OF AIR EMISSIONS EQUIPMENT.....	4-145
TABLE 4.11.1-3	SUMMARY OF POTENTIAL EMISSIONS FROM THE EXISTING TERMINAL EQUIPMENT.....	4-146
TABLE 4.11.1-4	SUMMARY OF INDIRECT EMISSIONS DUE TO CURRENT VESSEL OPERATIONS .....	4-147
TABLE 4.11.1-5	BACT DETERMINATIONS FOR ELBA ISLAND LNG TERMINAL.....	4-148
TABLE 4.11.1-6	SUMMARY OF CONSTRUCTION RELATED EMISSIONS FROM TERMINAL EXPANSION PROJECT .....	4-153
TABLE 4.11.1-7	SUMMARY OF CONSTRUCTION EMISSIONS FOR THE ELBA EXPRESS PIPELINE.....	4-154
TABLE 4.11.1-8	SUMMARY OF AIR EMISSIONS EQUIPMENT.....	4-154
TABLE 4.11.1-9	SUMMARY OF POTENTIAL EMISSIONS FROM THE PROPOSED TERMINAL EXPANSION.....	4-155
TABLE 4.11.1-10	SUMMARY OF INDIRECT EMISSIONS DUE TO CURRENT OPERATIONS .....	4-159
TABLE 4.11.1-11	SUMMARY OF INDIRECT EMISSION FROM THE TERMINAL EXPANSION PROJECT .....	4-160
TABLE 4.11.1-12	CUMULATIVE SECONDARY AND INDIRECT EMISSIONS FROM THE TERMINAL EXPANSION PROJECT .....	4-160
TABLE 4.11.1-13	PROPOSED EQUIPMENT FOR ELBA EXPRESS COMPRESSOR STATION .....	4-162
TABLE 4.11.1-14	SUMMARY OF POTENTIAL EMISSIONS FOR ELBA EXPRESS COMPRESSOR STATION .....	4-162
TABLE 4.11.2-1	MEASURED AMBIENT NOISE LEVELS NEAR THE EXISTING TERMINAL FACILITY (DBA).....	4-165
TABLE 4.11.2-2	MEASURED AMBIENT NOISE LEVELS AT CLOSER-IN POSITIONS NEAR THE EXISTING TERMINAL FACILITY (DBA) .....	4-167
TABLE 4.11.2-3	CALCULATED NOISE LEVEL DUE TO FULL LOAD LNG OPERATION (DBA) FROM THE EXISTING TERMINAL FACILITY .....	4-167
TABLE 4.11.2-4	EXISTING AMBIENT NOISE LEVELS NEAR THE PROPOSED COMPRESSOR STATION SITE (DBA) .....	4-168
TABLE 4.11.2-5	MAXIMUM CALCULATED CONSTRUCTION NOISE LEVELS AT NSA 2 BY TERMINAL EXPANSION CONSTRUCTION PHASE (DBA) .....	4-170
TABLE 4.11.2-6	TERMINAL EXPANSION CALCULATED OPERATION NOISE LEVELS SUMMARY (DBA) .....	4-171
TABLE 4.11.2-7	ELBA EXPRESS COMPRESSOR STATION EXISTING AND FUTURE NOISE IMPACTS AT NSAs (DBA).....	4-173
TABLE 4.12.3-1	IMPOUNDMENT AREAS .....	4-187
TABLE 4.12.3-2	THERMAL EXCLUSION ZONES .....	4-189
TABLE 4.12.4-1	TYPICAL LNG SHIP CHARACTERISTICS.....	4-193
TABLE 4.12.4-2	MINIMUM STRIKING SPEED TO PENETRATE LNG CARGO TANKS .....	4-197
TABLE 4.12.4-3	LNG SPILLS ON WATER FROM A 140,000 M <sup>3</sup> LNG CARRIER (USING THE ABSG MODEL).....	4-200
TABLE 4.12.8-1	PRELIMINARY AREA CLASS LOCATIONS FOR THE ELBA EXPRESS PIPELINE PROJECT .....	4-222
TABLE 4.12.8-2	NATURAL GAS SERVICE INCIDENTS BY CAUSE .....	4-224
TABLE 4.12.8-3	OFFICE OF PIPELINE SAFETY: TRANSMISSION PIPELINE INCIDENT SUMMARY BY CAUSE, 1/1/2005-12/31/2005 .....	4-225
TABLE 4.12.8-4	OUTSIDE FORCES INCIDENTS BY CAUSE (1970-1984) .....	4-225
TABLE 4.12.8-5	EXTERNAL CORROSION BY LEVEL OF CONTROL (1970-1984).....	4-226
TABLE 4.12.8-6	ANNUAL AVERAGE FATALITIES - NATURAL GAS TRANSMISSION AND GATHERING SYSTEMS .....	4-227
TABLE 4.12.8-7	NATIONWIDE ACCIDENTAL DEATHS A/ .....	4-227
TABLE 4.13-1	EXISTING, APPROVED, OR PROPOSED ACTIVITIES/PROJECTS THAT COULD CONTRIBUTE TO CUMULATIVE IMPACTS ASSOCIATED WITH CONSTRUCTION OF THE ELBA III PROJECT.....	4-229

## LIST OF FIGURES

FIGURE 2.0-1	PROJECT OVERVIEW.....	2-2
FIGURE 2.0-2	LNG TRANSIT ROUTE TO TERRITORIAL SEAS .....	2-3
FIGURE 2.0-3	EXISTING AND PROPOSED EXPANSION TERMINAL FACILITIES .....	2-4
FIGURE 2.2-1	TYPICAL ROW CROSS SECTIONS ADJACENT TO EXISTING PIPELINES.....	2-10
FIGURE 2.2-2	TYPICAL ROW CROSS SECTIONS .....	2-11
FIGURE 2.6-1	PIPELINE CONSTRUCTION SEQUENCE .....	2-17
FIGURE 3.2-1	EXISTING LNG SYSTEM TERMINAL ALTERNATIVES .....	3-5
FIGURE 3.2-2	OFFSHORE LNG TERMINAL ALTERNATIVE SITE .....	3-11
FIGURE 3.3-1	MAJOR ROUTE ALTERNATIVES A AND B .....	3-18
FIGURE 3.3-2	WEST, MIDWEST, AND EAST ROUTE ALTERNATIVES .....	3-21
FIGURE 3.3-3	LITTLE RIVER VARIATION.....	3-26
FIGURE 3.3-4	BEAVERDAM CREEK VARIATION .....	3-27
FIGURE 3.3-5	COLDWATER CREEK VARIATION.....	3-29
FIGURE 3.3-6	PROPOSED COMPRESSOR STATION SITE IN JENKINS COUNTY, GEORGIA.....	3-33
FIGURE 3.3-7	ALTERNATIVE COMPRESSOR STATION SITE IN SCREVEN COUNTY, GEORGIA .....	3-34
FIGURE 4.7-1	THREATENED AND ENDANGERED SPECIES ALONG THE LNG TRANSIT ROUTE.....	4-88
FIGURE 4.11-1	NSA LOCATION MAP FOR PROPOSED TERMINAL EXPANSION PROJECT .....	4-166
FIGURE 4.11-2	NSA LOCATION MAP FOR ELBA EXPRESS COMPRESSOR STATION .....	4-169
FIGURE 4.12-1	ENVIRONMENTAL RESOURCES ALONG LNG TRANSIT ROUTE –ONSHORE PORTION.....	4-203
FIGURE 4.12-2	ENVIRONMENTAL RESOURCES ALONG LNG TRANSIT ROUTE – OFFSHORE PORTION.....	4-204

## ACRONYMS AND ABBREVIATIONS

ABSG	ABSG Consulting Inc.
ACHP	Advisory Council on Historic Preservation
AGL	Atlanta Gas and Light
AIS	Automated Identification System
Applicants	Southern LNG, EEC, and Southern
AQCR	Air quality control regions
ASCE	American Society of Civil Engineers
ATM	Applied Technology & Management, Inc.
ATW	additional temporary workspace
BA	Biological Assessment
BACT	Best Available Control Technology
Bcf/d	billion cubic feet per day
Bcfe	billion cubic feet equivalent
BEA	Bureau of Economic Analysis
BMP	Best Management Practice
CAA	Clear Air Act
CDF	confined disposal facility
CEII	critical energy infrastructure information
CEMS	Continuous Emissions Monitoring System
CEQ	Council on Environmental Quality
Certificate	FERC Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CO	carbon monoxide
Coast Guard	U.S. Coast Guard
COE	U.S. Army Corps of Engineers
COTP	Captain of the Port
CWA	Clean Water Act
CZMA	Section 307 of the Coastal Zone Management Act of 1972
CZMP	Coastal Zone Management Program
dBA	decibels on the A-weighted scale
DHEC	Department of Health and/or Environmental Control
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EA	Environmental Assessment
EEC	Elba Express Company, LLC
EEC's Plan	Upland Erosion Control, Revegetation and Maintenance Plan
EEC's Procedures	Wetland and Waterbody Construction and Mitigation Procedures
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
EI	Environmental Inspector
EA	environmental assessment
EIS	Environmental Impact Statement
Elba II Project	Elba Island Expansion Project
EPA	U.S. Environmental Protection Agency

ESA	Endangered Species Act of 1973
ESD	emergency shut-down
FEMA	Federal Emergency Management Agency
FERC or Commission	Federal Energy Regulatory Commission
FGT	Florida Gas Transmission Company
FICA	Federal Insurance Contributions Act
FMP	Fisheries Management Plans
FPC	Federal Power Commission
FSO	Facility Security Officer
FSRU	floating storage and regasification units
FWS	U.S. Fish and Wildlife Service
GBS	gravity based structures
GDNR	Georgia Department of Natural Resources
GEPD	Georgia Environmental Protection Division
gpm	gallons per minute
GPS	global system positioning system
GRAQC	Georgia's Rules for Air Quality Control
GWRC-RR	Georgia Woodlands Railroad
HAP	Hazardous Air Pollutant
H&K	Hoover and Keith, Inc.
HCA	high consequence area
HDD	horizontal directional drill
HFO	heavy fuel oil
hp	horsepower
HRT-RR	Hartwell Railroad
IBA	Important Bird Area
IMO	International Maritime Organization
I-O	Regional Input-Output
ISPS	International Ship and Port Facility Security
$L_{dn}$	day-night sound level
$L_{eq(24)}$	equivalent sound level
LFL	lower flammability limit
LNG	liquefied natural gas
LOI	Letter of Intent
LOR	Letter of Recommendation
LPG	liquefied petroleum gas
$m^3$	cubic meter
MACT	Maximum Achievable Control Technology
MAFMC	Mid-Atlantic Fishery Management Council
MAOP	Maximum Allowable Operating Pressure
MARSEC	Maritime Security
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
MLV	mainline valves
MLW	mean low water
MMcf/d	million cubic feet per day

MMPA	Marine Mammal Protection Act
MP	milepost
mph	miles per hour
MSE	mechanically-stabilized earth
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSU	Marine Safety Unit
MUID	Map Unit Identifiers
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association Standard
NGA	Natural Gas Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	NOAA Fisheries
NMFS	NOAA's National Marine Fisheries Service
NOI	<i>Notice of Intent to Prepare an Environmental Impact Statement and U.S. Coast Guard Letter of Recommendation for the Proposed Elba III Project and Request for Comments on Environmental Issues and Notice of Public Comment Meetings</i>
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxide
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	National River Index
NSA	noise sensitive area
NSPS	New Source Performance Standards
NSR	New Source Review
NS-RR	Norfolk Southern Railroad
NVIC	Navigation and Vessel Inspection Circular
NWI	National Wetland Inventory
NWR	National Wildlife Refuge
°F	fahrenheit
OEP	Office of Energy Projects
ORV	Outstanding Remarkable Values
OPS	Office of Pipeline Safety
PEM	palustrine emergent
PEMS	Predictive Emissions Monitoring System
PF	Pre-Filing
PFO	Palustrine forested
PHMSA	Pipeline and Hazardous Materials Safety Administration
Project	Elba III Project

project-wide Spill Plan	Southern LNG and EEC's Spill Plan, Waste Plan and Container Management Policy
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psig	pounds per square inch gauge
PSS	Palustrine scrub-shrub
PTE	Potential to Emit
Quest	Quest Consultants, Inc.
right whale	North Atlantic right whale
RIMS II	Regional Input-Output Modeling System
RNA	Regulated Navigation Area
Ro-Ro	roll on-roll off
ROW	right-of-way
RPT	rapid phase transition
RRCC	Robust Redhorse Conservation Commission
SAFMC	South Atlantic Fishery Management Council
SAIT	South Atlantic International Terminal
SCDNR	South Carolina Department of Natural Resources
SCPC	South Carolina Pipeline Company
SEPCO	Savannah Electric and Power Company
Shell	Shell Trading (U.S.) Company
SHEP	Savannah Harbor Expansion Project
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
Southern	Southern Natural Gas Company
Southern LNG	Southern LNG Inc.
Southern LNG's Plan	Upland Erosion Control, Revegetation and Maintenance Plan
Southern LNG's Procedures	Wetland and Waterbody Construction and Mitigation Procedures
STATSGO	State Soil Geographic
Terminal	Elba Island LNG Import Terminal and associated facilities
TEUs	twenty foot equivalent containers (units)
TNT	trinitrotoluene
tpy	tons per year
Transco	Transcontinental Gas Pipe Line Corporation
U.S.	United States
UG-CVIG	University of Georgia, Carl Vinson Institute of Government
USC	United States Code
USDA	U.S. Department of Agriculture
USGS	United States Geological Survey
Vessel Strike Avoidance Policy	Vessel Strike Avoidance and Injured/Dead Protected
VOC	volatile organic compounds
VSO	Vessel Security Officer
WMA	Wildlife Management Area
WSA	Waterway Suitability Assessment