

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
<u>VOLUME 1</u>		
	SUMMARY	S-1
1.	PURPOSE AND NEED FOR AGENCY ACTION	1-1
1.1	<u>INTRODUCTION</u>	1-1
1.2	<u>CLEAN COAL POWER INITIATIVE</u>	1-1
1.3	<u>FEDERAL LOAN GUARANTEE PROGRAM</u>	1-4
1.4	<u>PROPOSED ACTIONS</u>	1-4
1.4.1	DOE	1-4
1.4.2	USACE	1-5
1.4.3	INDUSTRY PROPONENTS	1-6
1.5	<u>PURPOSES AND NEEDS FOR AGENCY ACTIONS</u>	1-6
1.5.1	DOE	1-6
1.5.2	USACE	1-7
1.6	<u>POTENTIAL PROJECT BENEFITS</u>	1-8
1.7	<u>NEPA</u>	1-12
1.8	<u>SCOPE OF THE EIS</u>	1-14
1.8.1	ISSUES IDENTIFIED PRIOR TO SCOPING PROCESS	1-14
1.8.2	ISSUES IDENTIFIED DURING SCOPING PROCESS	1-15
1.8.3	SUMMARY OF COMMENTS RECEIVED ON DRAFT EIS	1-16
1.8.4	ALTERNATIVES CONSIDERED	1-18
2.	THE PROPOSED ACTION AND ALTERNATIVES	2-1
2.1	<u>PROPOSED ACTION</u>	2-1
2.1.1	PROJECT SITE LOCATION AND GENERAL DESCRIPTION	2-1
2.1.2	TECHNOLOGY AND PROJECT DESCRIPTION	2-5
2.1.2.1	<u>Lignite Receiving, Storage, Handling, and Feeding</u>	2-8
2.1.2.2	<u>Transport Integrated Gasification (TRIG™)</u>	2-10
2.1.2.3	<u>High-Temperature Syngas Cooling</u>	2-11
2.1.2.4	<u>Particulate Collection</u>	2-11
2.1.2.5	<u>CO₂, Sulfur, and Mercury Removal</u>	2-12
2.1.2.6	<u>Sulfur and CO₂ Recovery</u>	2-12
2.1.2.7	<u>Sour Water Treatment and Ammonia Recovery</u>	2-13
2.1.2.8	<u>Flare</u>	2-13
2.1.2.9	<u>Combined-Cycle Systems</u>	2-14
2.1.2.10	<u>Cooling Towers and Makeup Water Pond</u>	2-15
2.1.2.11	<u>Beneficial Use of CO₂ for EOR and Geologic Storage</u>	2-15
2.2	<u>CONNECTED ACTIONS</u>	2-17

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	2.2.1 SURFACE LIGNITE MINE	2-19
	2.2.1.1 <u>General Description of the Surface Lignite Mine</u>	2-21
	2.2.1.2 <u>USACE Mine Plan Approval</u>	2-23
	2.2.1.3 <u>USACE Wetland and Stream Mitigation Plan Approval</u>	2-23
	2.2.1.4 <u>Relationship of USACE and MDEQ Permits to DOE's Decision-Making</u>	2-24
	2.2.2 NATURAL GAS SUPPLY PIPELINE	2-24
	2.2.3 ELECTRICAL TRANSMISSION LINES AND SUBSTATIONS	2-25
	2.2.4 RECLAIMED EFFLUENT PIPELINE	2-27
	2.2.5 CO ₂ PIPELINES	2-28
2.3	<u>CONSTRUCTION PLANS</u>	2-29
	2.3.1 POWER PLANT	2-29
	2.3.2 SURFACE LIGNITE MINE	2-30
	2.3.2.1 <u>Dragline Assembly</u>	2-31
	2.3.2.2 <u>Lignite Handling Facilities</u>	2-31
	2.3.2.3 <u>Mine Facilities</u>	2-32
	2.3.2.4 <u>Premining Activities</u>	2-32
	2.3.2.5 <u>Construction Schedule</u>	2-34
	2.3.3 LINEAR FACILITIES	2-34
2.4	<u>OPERATIONAL PLANS</u>	2-36
	2.4.1 POWER PLANT	2-36
	2.4.2 SURFACE LIGNITE MINE	2-37
	2.4.2.1 <u>Premining Activities—Future Mining Areas</u>	2-38
	2.4.2.2 <u>Reclamation and Mitigation</u>	2-49
	2.4.3 LINEAR FACILITIES	2-51
	2.4.4 CONTINGENCY PLANS	2-54
	2.4.5 CLOSURE AND DECOMMISSIONING	2-55
	2.4.5.1 <u>Temporary Closure</u>	2-55
	2.4.5.2 <u>Permanent Decommissioning</u>	2-56
2.5	<u>RESOURCE REQUIREMENTS</u>	2-57
	2.5.1 LAND AREA REQUIREMENTS	2-57
	2.5.2 WATER REQUIREMENTS	2-59
	2.5.3 FUEL AND OTHER MATERIAL REQUIREMENTS	2-61

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
2.6	<u>OUTPUTS, DISCHARGES, AND WASTES</u>	2-63
2.6.1	AIR EMISSIONS	2-63
2.6.2	LIQUID DISCHARGES	2-65
2.6.2.1	<u>IGCC Power Plant</u>	2-65
2.6.2.2	<u>Lignite Mine</u>	2-66
2.6.2.3	<u>Linear Facilities</u>	2-69
2.6.3	BYPRODUCTS AND SOLID WASTES	2-69
2.6.3.1	<u>Construction</u>	2-69
2.6.3.2	<u>Operation</u>	2-69
2.6.4	TOXIC AND HAZARDOUS MATERIALS	2-72
2.7	<u>ALTERNATIVES</u>	2-73
2.7.1	NO-ACTION ALTERNATIVE	2-74
2.7.2	PROJECT-SPECIFIC ALTERNATIVES UNDER CONSIDERATION	2-74
2.7.2.1	<u>Alternative Sources of Water Supply</u>	2-75
2.7.2.2	<u>Alternative Linear Facility Routes</u>	2-75
2.7.2.3	<u>Alternative Levels of CO₂ Capture</u>	2-76
2.7.3	PROJECT ALTERNATIVES CONSIDERED BY DOE AND THE PROJECT'S PROPONENTS	2-77
2.7.3.1	<u>Alternative Project Applications Considered by DOE in the CCPI Round 2 Procurement Process</u>	2-77
2.7.3.2	<u>Alternative Sites</u>	2-78
2.7.3.3	<u>Alternative Power Generation Technologies</u>	2-80
2.7.4	PROJECT ALTERNATIVES DISMISSED FROM FURTHER CONSIDERATION BY PROJECT PROPONENTS	2-81
2.7.4.1	<u>Alternative Size</u>	2-81
2.7.4.2	<u>Alternative Fuels</u>	2-84
2.7.4.3	<u>Alternative Plant Layout</u>	2-84
2.7.4.4	<u>Alternative Mining Methods</u>	2-85
2.7.4.5	<u>Alternative Mine Development Plans</u>	2-86
2.7.4.6	<u>Alternative Means of CO₂ Sequestration</u>	2-91
3.	AFFECTED ENVIRONMENT	3-1
3.1	<u>INTRODUCTION</u>	3-1
3.2	<u>REGIONAL SETTING AND GENERAL AREA DESCRIPTION</u>	3-1

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
3.3	<u>CLIMATE AND AIR QUALITY</u>	3-2
	3.3.1 CLIMATOLOGY AND METEOROLOGY	3-2
	3.3.2 AMBIENT AIR QUALITY	3-3
	3.3.3 EXISTING EMISSION SOURCES	3-14
3.4	<u>GEOLOGY</u>	3-16
	3.4.1 REGIONAL PHYSIOGRAPHY	3-16
	3.4.2 STRATIGRAPHY AND STRUCTURE	3-21
	3.4.2.1 <u>Power Plant Site</u>	3-21
	3.4.2.2 <u>Mine Study Area</u>	3-26
	3.4.3 MINE STUDY AREA OVERBURDEN CHEMISTRY	3-26
	3.4.4 MINERAL RESOURCES	3-29
	3.4.5 SEISMOLOGY	3-29
	3.4.5.1 <u>Tectonic Setting</u>	3-29
	3.4.5.2 <u>Regional Geologic Structure and Faulting</u>	3-30
	3.4.5.3 <u>Earthquake History</u>	3-33
	3.4.5.4 <u>Seismic Source Zone Influencing Proposed Project Area</u>	3-35
	3.4.5.5 <u>Soil Amplification of Ground Motions and Ground Deformation Potential</u>	3-35
	3.4.5.6 <u>Earthquake Recurrence Estimates and Seismic Hazard</u>	3-37
3.5	<u>SOILS</u>	3-37
	3.5.1 REGIONAL SETTING	3-37
	3.5.2 POWER PLANT SITE AND MINE STUDY AREA	3-40
	3.5.2.1 <u>Soil Classification and Description</u>	3-40
	3.5.2.2 <u>Soil Capability and Productivity</u>	3-44
	3.5.2.3 <u>Prime Farmland Soils</u>	3-47
3.6	<u>SURFACE WATER RESOURCES</u>	3-47
	3.6.1 REGIONAL HYDROLOGIC SETTING	3-47
	3.6.1.1 <u>Pascagoula River Basin</u>	3-48
	3.6.1.2 <u>Tombigbee River Basin</u>	3-52
	3.6.1.3 <u>Flow Rates</u>	3-52
	3.6.2 POWER PLANT SITE AND MINE STUDY AREA SURFACE WATERS	3-54
	3.6.3 SURFACE WATERS PROXIMATE TO PROPOSED LINEAR FACILITY CORRIDORS	3-57

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	3.6.4 SURFACE WATER QUALITY AND USE	3-57
	3.6.5 SPECIAL WATER BODY DESIGNATIONS	3-61
3.7	<u>GROUND WATER RESOURCES</u>	3-63
	3.7.1 REGIONAL GEOHYDROLOGIC SETTING	3-63
	3.7.2 GROUND WATER QUALITY AND USE	3-66
	3.7.2.1 <u>Water Use</u>	3-66
	3.7.2.2 <u>Water Quality</u>	3-68
	3.7.3 PROJECT AREA HYDROGEOLOGY	3-74
3.8	<u>TERRESTRIAL ECOLOGY</u>	3-79
	3.8.1 REGIONAL SETTING	3-79
	3.8.2 POWER PLANT SITE	3-80
	3.8.2.1 <u>Vegetation</u>	3-81
	3.8.2.2 <u>Wildlife</u>	3-96
	3.8.2.3 <u>Threatened and Endangered Species</u>	3-98
	3.8.3 MINE STUDY AREA	3-99
	3.8.3.1 <u>Vegetation</u>	3-99
	3.8.3.2 <u>Wildlife</u>	3-100
	3.8.3.3 <u>Threatened and Endangered Species</u>	3-106
	3.8.4 LINEAR FACILITY CORRIDORS, RIGHTS-OF-WAY, AND SUBSTATION SITES	3-114
	3.8.4.1 <u>Vegetation</u>	3-114
	3.8.4.2 <u>Wildlife</u>	3-125
	3.8.4.3 <u>Threatened and Endangered Species</u>	3-126
3.9	<u>AQUATIC ECOLOGY</u>	3-130
	3.9.1 REGIONAL SETTING	3-130
	3.9.2 OKATIBBEE LAKE	3-132
	3.9.3 POWER PLANT SITE AND MINE STUDY AREA	3-132
	3.9.3.1 <u>Stream Habitat Quality and Biota</u>	3-132
	3.9.3.2 <u>Fish Communities</u>	3-140
	3.9.3.3 <u>Threatened and Endangered Species</u>	3-147
	3.9.4 LINEAR FACILITY CORRIDORS AND RIGHTS-OF-WAY	3-149

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	3.10 <u>FLOODPLAINS</u>	3-149
	3.11 <u>WETLANDS/WATERWAYS</u>	3-149
	3.11.1 POWER PLANT SITE	3-150
	3.11.2 MINE STUDY AREA	3-152
	3.11.2.1 <u>Field Assessments of Wetland Boundaries</u>	3-152
	3.11.2.2 <u>Desktop Assessment of Wetland Boundaries</u>	3-153
	3.11.2.3 <u>Results</u>	3-153
	3.11.3 LINEAR FACILITY CORRIDORS, RIGHTS-OF-WAY, AND SUBSTATION SITES	3-158
	3.11.3.1 <u>Natural Gas Pipeline Corridor</u>	3-158
	3.11.3.2 <u>Reclaimed Effluent Pipeline Corridor</u>	3-159
	3.11.3.3 <u>Transmission Line Corridors</u>	3-162
	3.11.3.4 <u>CO₂ Pipeline Corridor</u>	3-164
	3.11.3.5 <u>Substation Sites</u>	3-167
	3.12 <u>LAND USE</u>	3-168
	3.12.1 REGIONAL SETTING	3-168
	3.12.2 POWER PLANT SITE AND MINE STUDY AREA	3-169
	3.12.3 LINEAR FACILITY CORRIDORS, RIGHTS-OF-WAY, AND SUBSTATIONS	3-172
	3.13 <u>SOCIAL AND ECONOMIC RESOURCES</u>	3-172
	3.13.1 POPULATION AND DEMOGRAPHY	3-173
	3.13.2 EMPLOYMENT AND INCOME	3-174
	3.13.3 HOUSING	3-174
	3.13.4 LOCAL GOVERNMENT REVENUES AND EXPENDITURES	3-175
	3.13.5 COMMUNITY/PUBLIC SERVICES	3-176
	3.13.5.1 <u>Schools</u>	3-176
	3.13.5.2 <u>Water and Wastewater Services</u>	3-176
	3.13.5.3 <u>Police Protection</u>	3-176
	3.13.5.4 <u>Fire Protection and Emergency Medical Service</u>	3-177
	3.13.5.5 <u>Health Care</u>	3-177
	3.13.6 ENVIRONMENTAL JUSTICE	3-177
	3.13.7 NATIVE AMERICAN TRIBAL LANDS	3-179
	3.14 <u>TRANSPORTATION INFRASTRUCTURE</u>	3-181
	3.14.1 REGIONAL SETTING	3-181
	3.14.2 ROADWAYS	3-181

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	3.14.3 RAILROADS	3-189
	3.14.4 AIRPORTS	3-190
3.15	<u>WASTE MANAGEMENT FACILITIES</u>	3-190
3.16	<u>RECREATION RESOURCES</u>	3-190
	3.16.1 OKATIBBEE LAKE AND WMA	3-190
	3.16.2 KEMPER COUNTY LAKE AND OTHER AREA RESOURCES	3-193
3.17	<u>AESTHETIC AND VISUAL RESOURCES</u>	3-193
3.18	<u>CULTURAL AND HISTORIC RESOURCES</u>	3-193
	3.18.1 REGIONAL SETTING	3-193
	3.18.2 NATIONAL REGISTER OF HISTORIC PLACES	3-197
	3.18.3 POWER PLANT SITE	3-197
	3.18.4 MINE STUDY AREA	3-199
	3.18.5 LINEAR FACILITY CORRIDORS AND RIGHTS-OF-WAY	3-201
	3.18.5.1 <u>Introduction and Approach</u>	3-201
	3.18.5.2 <u>Survey Results</u>	3-203
3.19	<u>NOISE</u>	3-212
	3.19.1 NOISE CONCEPTS	3-212
	3.19.2 NOISE REGULATIONS AND GUIDELINES	3-213
	3.19.3 AMBIENT SOUND LEVELS	3-214
	3.19.3.1 <u>Power Plant Site and Mine Study Area</u>	3-214
	3.19.3.2 <u>Linear Facility Corridors and Rights-of-Way</u>	3-216
3.20	<u>HUMAN HEALTH AND SAFETY</u>	3-216
	3.20.1 PROJECT AREA PUBLIC HEALTH AND SAFETY	3-216
	3.20.2 AIR QUALITY AND PUBLIC HEALTH	3-216
	3.20.3 ELECTRIC AND MAGNETIC FIELDS	3-217
	3.20.3.1 <u>Background</u>	3-217
	3.20.3.2 <u>Health Implications</u>	3-218
	3.20.3.3 <u>Regulatory Requirements</u>	3-220
	3.20.3.4 <u>Existing Conditions</u>	3-220
4.	ENVIRONMENTAL CONSEQUENCES	4-1
4.1	<u>INTRODUCTION</u>	4-1
4.2	<u>IMPACTS OF PROPOSED ACTION</u>	4-1
	4.2.1 ATMOSPHERIC RESOURCES AND AIR QUALITY	4-1

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	4.2.1.1 <u>Construction</u>	4-2
	4.2.1.2 <u>Operation</u>	4-5
4.2.2	GEOLOGY	4-17
	4.2.2.1 <u>Construction</u>	4-17
	4.2.2.2 <u>Operation</u>	4-17
4.2.3	SOILS	4-18
	4.2.3.1 <u>Construction</u>	4-18
	4.2.3.2 <u>Operation</u>	4-19
4.2.4	SURFACE WATER RESOURCES	4-23
	4.2.4.1 <u>Construction</u>	4-24
	4.2.4.2 <u>Operation</u>	4-27
4.2.5	GROUND WATER RESOURCES	4-48
	4.2.5.1 <u>Construction</u>	4-48
	4.2.5.2 <u>Operation</u>	4-49
4.2.6	TERRESTRIAL ECOLOGY	4-57
	4.2.6.1 <u>Construction</u>	4-58
	4.2.6.2 <u>Operation</u>	4-67
4.2.7	AQUATIC ECOLOGY	4-75
	4.2.7.1 <u>Construction</u>	4-75
	4.2.7.2 <u>Operation</u>	4-76
4.2.8	FLOODPLAINS	4-79
	4.2.8.1 <u>Construction</u>	4-79
	4.2.8.2 <u>Operation</u>	4-80
4.2.9	WETLANDS	4-82
	4.2.9.1 <u>Construction</u>	4-83
	4.2.9.2 <u>Operation</u>	4-86
4.2.10	LAND USE	4-87
	4.2.10.1 <u>Construction</u>	4-88
	4.2.10.2 <u>Operation</u>	4-89

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	4.2.11 SOCIAL AND ECONOMIC RESOURCES	4-90
	4.2.11.1 <u>Construction</u>	4-90
	4.2.11.2 <u>Operation</u>	4-93
	4.2.11.3 <u>Forestry Resources</u>	4-98
	4.2.12 ENVIRONMENTAL JUSTICE	4-100
	4.2.12.1 <u>Construction</u>	4-105
	4.2.12.2 <u>Operation</u>	4-106
	4.2.13 TRANSPORTATION INFRASTRUCTURE	4-109
	4.2.13.1 <u>Construction</u>	4-110
	4.2.13.2 <u>Operation</u>	4-114
	4.2.14 WASTE MANAGEMENT FACILITIES	4-119
	4.2.14.1 <u>Construction</u>	4-119
	4.2.14.2 <u>Operation</u>	4-120
	4.2.15 RECREATION RESOURCES	4-120
	4.2.15.1 <u>Construction</u>	4-121
	4.2.15.2 <u>Operation</u>	4-121
	4.2.16 AESTHETIC AND VISUAL RESOURCES	4-122
	4.2.16.1 <u>Construction</u>	4-122
	4.2.16.2 <u>Operation</u>	4-123
	4.2.17 CULTURAL AND HISTORIC RESOURCES	4-124
	4.2.17.1 <u>Construction</u>	4-124
	4.2.17.2 <u>Operation</u>	4-126
	4.2.18 NOISE	4-127
	4.2.18.1 <u>Construction</u>	4-127
	4.2.18.2 <u>Operation</u>	4-129
	4.2.19 HUMAN HEALTH AND SAFETY	4-133
	4.2.19.1 <u>Construction</u>	4-133
	4.2.19.2 <u>Operation</u>	4-135
	4.2.19.3 <u>Intentional Destructive Acts</u>	4-154

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	4.3 <u>IMPACTS OF NO ACTION</u>	4-154
	4.4 <u>COMPARATIVE IMPACTS OF PROJECT DEVELOPMENT ALTERNATIVES UNDER CONSIDERATION</u>	4-155
	4.4.1 ALTERNATIVE SOURCES OF WATER SUPPLY	4-156
	4.4.2 ALTERNATIVE LINEAR FACILITY ROUTES	4-158
	4.4.3 ALTERNATIVE LEVELS OF CO ₂ CAPTURE	4-159
5.	POLLUTION PREVENTION AND MITIGATION MEASURES	5-1
6.	CUMULATIVE EFFECTS	6-1
	6.1 <u>ATMOSPHERIC RESOURCES</u>	6-1
	6.1.1 AIR QUALITY	6-1
	6.1.2 CLIMATE CHANGE	6-2
	6.2 <u>SURFACE WATER RESOURCES</u>	6-9
	6.2.1 AREAL EXTENT OF CUMULATIVE EFFECTS ANALYSIS	6-9
	6.2.1.1 <u>Pascagoula River Basin</u>	6-11
	6.2.1.2 <u>Pascagoula River Flows and Patterns</u>	6-11
	6.2.1.3 <u>Pascagoula River Water Quality</u>	6-12
	6.2.1.4 <u>Pascagoula River Basin Historical and Current Land Use</u>	6-15
	6.2.1.5 <u>Stewardship Lands</u>	6-15
	6.2.1.6 <u>Natural Land Cover</u>	6-20
	6.2.2 REASONABLY FORESEEABLE FUTURE DOE ACTIONS	6-20
	6.2.2.1 <u>SPR Expansion</u>	6-21
	6.2.2.2 <u>Mississippi Gasification Facility</u>	6-23
	6.2.3 REASONABLY FORESEEABLE FUTURE USACE ACTIONS	6-24
	6.2.3.1 <u>Civil Works Programs</u>	6-24
	6.2.3.2 <u>Regulatory Program</u>	6-25
	6.2.4 CUMULATIVE IMPACTS TO OKATIBBEE LAKE	6-25
	6.3 <u>GEOLOGIC AND GROUND WATER RESOURCES</u>	6-28
	6.4 <u>SOCIAL AND ECONOMIC RESOURCES, INCLUDING TRAFFIC CONGESTION ISSUES</u>	6-28
	6.5 <u>ENVIRONMENTAL JUSTICE</u>	6-29
	6.6 <u>OTHER ISSUES</u>	6-29

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
7.	PERMITTING AND LICENSING REQUIREMENTS	7-1
7.1	<u>FEDERAL REQUIREMENTS</u>	7-1
7.1.1	CLEAN AIR ACT	7-1
7.1.2	CLEAN WATER ACT	7-4
7.1.3	RESOURCE CONSERVATION AND RECOVERY ACT OF 1976	7-7
7.1.4	FEDERAL AVIATION ACT OF 1958	7-7
7.1.5	SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977	7-8
7.1.6	DOE FLOODPLAIN AND WETLAND ENVIRONMENTAL REVIEW REQUIREMENTS	7-9
7.1.7	ENDANGERED SPECIES ACT OF 1973	7-11
7.1.8	NATIONAL HISTORIC PRESERVATION ACT OF 1966	7-11
7.1.9	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	7-12
7.1.10	MINING SAFETY AND HEALTH ADMINISTRATION	7-12
7.1.11	PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION	7-13
7.2	<u>STATE REQUIREMENTS</u>	7-13
8.	IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES	8-1
9.	THE RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY	9-1
10.	REFERENCES	10-1
11.	LIST OF PREPARERS	11-1
12.	LIST OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT COPIES OF EIS	12-1

VOLUME 2

APPENDICES

APPENDIX A—AGENCY CORRESPONDENCE AND CONSULTATION LETTERS
APPENDIX B—DRAFT COMPENSATORY STREAM MITIGATION STANDARD OPERATING PROCEDURES AND GUIDELINES
APPENDIX C—KEMPER COUNTY IGCC PROJECT AIR EMISSIONS DATA
APPENDIX D—KEMPER COUNTY IGCC PROJECT MINE STUDY AREA AND LAKE OKATIBBEE SURFACE WATER QUALITY MEASUREMENTS
APPENDIX E—KEMPER COUNTY IGCC PROJECT SITE WETLAND ASSESSMENT AND ECOLOGICAL SURVEY REPORTS
APPENDIX F—KEMPER COUNTY IGCC PROJECT MISSISSIPPI MUSEUM OF NATURAL SCIENCE DATA REQUEST AND RESPONSE
APPENDIX G—NATURAL HISTORY AND TAXONOMIC REFERENCES FOR PRICE'S POTATO-BEAN

TABLE OF CONTENTS

<u>Chapter</u>	<u>Section</u>	<u>Page</u>
	APPENDIX H—KEMPER COUNTY IGCC PROJECT WILDLIFE SPECIES DOCUMENTED IN MINE STUDY AREA	
	APPENDIX I—STREAM ASSESSMENT REPORT FOR THE PROPOSED LIBERTY FUELS MINE AND THE EXISTING RED HILLS MINE	
	APPENDIX J—KEMPER COUNTY IGCC PROJECT MINE STUDY AREA AQUATIC TAXONOMY DATA	
	APPENDIX K—WETLAND HABITAT QUALITY ASSESSMENT DATA SHEETS FOR THE PROPOSED LIBERTY FUELS MINE	
	APPENDIX L—KEMPER COUNTY IGCC PROJECT NATIVE AMERICAN TRIBAL CONSULTATIONS	
	APPENDIX M—MISSISSIPPI DEPARTMENT OF ARCHIVES AND HISTORY REPLIES TO PHASE I CULTURAL RESOURCES ASSESSMENTS	
	APPENDIX N—KEMPER COUNTY IGCC PROJECT COOLING TOWER IMPACT ASSESSMENTS	
	APPENDIX O—KEMPER COUNTY IGCC PROJECT GROUND WATER WITHDRAWAL IMPACT ASSESSMENT	
	APPENDIX P—PROPOSED STREAM AND WETLAND MITIGATION PLANS	
	APPENDIX Q—KEMPER COUNTY IGCC PROJECT NOISE IMPACT STUDY	
	APPENDIX R—KEMPER COUNTY IGCC PROJECT HAZARDOUS AIR POLLUTANT RISK SCREENING ANALYSES	
	APPENDIX S—LETTER OF UNDERSTANDING AND DISCLOSURE STATEMENT	
	APPENDIX T—ALTERNATIVES EVALUATION	
	APPENDIX U—USACE SUPPLEMENTAL EVALUATION EXECUTIVE ORDER 13045	

LIST OF TABLES

<u>Table</u>	<u>Page</u>	
1.8-1	Issues Identified for Consideration in this EIS	1-16
2.4-1	Liberty Fuels Mine—40-Year Mine Plan, Estimated Acres Disturbed	2-40
2.4-2	Summary of Mine Support Structures	2-41
2.5-1	Principal Full Load Operating Characteristics of the Proposed Kemper County IGCC Project	2-57
2.5-2	Summary of Expected Land Area Requirements	2-57
2.5-3	Estimated Makeup Supply Water Characteristics	2-60
2.5-4	Characteristics of Lignite Coal Expected to be Received for the Proposed Kemper County IGCC Project	2-61
2.6-1	Anticipated Maximum Air Emissions from Each HRSG Stack	2-64
2.6-2	Consolidated Discharge Water Quality—Red Hills Mine, 2004 through 2009	2-68
2.6-3	Supplemental Discharge Water Quality Data—Red Hills Mine, December 2009	2-69
2.6-4	Pilot-Scale Gasification Ash TCLP Data	2-70
2.7-1	Overview Comparison of IGCC and Other Coal-Based Technologies—EPA	2-82
2.7-2	Overview Comparison of IGCC and Other Coal-Based Technologies—DOE	2-83
3.3-1	Mean Temperature Data for Meridian, Mississippi (1971 to 2000)	3-2
3.3-2	NAAQS	3-5
3.3-4	PM _{2.5} Annual Averages— 2002 through 2008	3-7
3.3-3	8-hour Ozone Design Values—2002 through 2008	3-7
3.3-5	PM _{2.5} 24-hour Averages— 2002 through 2008	3-7
3.3-6	PM ₁₀ 24-hour Averages for Demopolis, Alabama—1998 through 2001	3-7
3.3-7	Comparison of Recent Monitored Ambient Levels of Organic HAPs (Including Carbon Disulfide) and Health-Based Indices	3-11
3.3-8	Comparison of Recent Monitored Levels of Metallic HAPs to Health-Based Indices	3-12
3.3-9	Comparison of 2002 Monitored Annual Average HAP Concentrations to 2002 NATA Results for Kemper County	3-13
3.3-11	HAP Emissions from Major Sources in Kemper County	3-15

LIST OF TABLES

<u>Table</u>	<u>Page</u>	
3.3-10	Kemper County 2002 HAP Emissions	3-15
3.4-1	Geologic Units in Mississippi	3-18
3.4-2	Summary of Subsurface Conditions Observed to a Depth of 125 ft at the Power Plant Site	3-25
3.4-3	Summary of Overburden Geochemical Results	3-28
3.5-1	Acreage and Proportionate Extent of Premining Soil Resources	3-41
3.5-2	Selected Physical and Chemical Properties of Project Area Soils	3-43
3.5-3	Land Capability and Crop and Pasture Productivity of Project Area Soils	3-45
3.5-4	Forest Suitability and Potential Productivity of Project Area Soils	3-46
3.6-1	Precipitation and Runoff 1961 to 1990 Okatibbee Creek Basin	3-50
3.6-2	Rainfall-Runoff Relationship for Okatibbee Creek	3-50
3.6-3	Unit Hydrograph of Reservoir Inflow	3-51
3.6-4	USGS 7Q10 Flowrates	3-53
3.6-5	USGS Flood Probabilities for Area Streams	3-53
3.6-6	Flow Rates and Duration Estimates for Selected Stations in the Pascagoula Basin	3-54
3.6-7	Summary of Flow Measurement Data	3-56
3.6-8	Storm Event Peak Flows and Runoff Volume Modeling Results for Project Area Watersheds—Premining	3-58
3.6-9	Water Bodies in the Project Vicinity	3-59
3.7-2	Estimated Aquifer Characteristic Values	3-64
3.7-1	Summary of Aquifer Characteristics Values from RHPP FEIS	3-65
3.7-3	Water Wells Located within 20 Miles from the Power Plant Site and the Aquifers Used	3-67
3.7-4	Well and Spring Inventory Results	3-68
3.7-5	Ground Water Quality Data from Power Plant Site Test Wells	3-71
3.7-6	Summary of Ground Water and Spring Water Quality Data from the Mine Study Area	3-75
3.7-7	Wilcox Aquifers—Hydrogeologic Data from Test Wells	3-77
3.7-8	Conceptual Model of Local Hydrogeologic Setting	3-79

LIST OF TABLES

<u>Table</u>	<u>Page</u>	
3.8-2	Vegetation/Land Use Types Identified within the Power Plant Site	3-81
3.8-1	Plant Species Observed on the Lignite Mine Study Area and Power Generating Sites and Linear Facilities Corridors (Natural Gas Pipeline, Reclaimed Effluent Pipeline, Transmission Lines, and CO ₂ Pipeline)	3-83
3.8-3	Wildlife Species Observed on the Power Plant Site (May and October 2008)	3-97
3.8-4	Potential for Occurrence of Listed Wildlife Species on the Power Plant Site	3-99
3.8-5	Wildlife Species Documented Within the Proposed Mine Study Area	3-101
3.8-6	Wildlife Species that are Expected to Occur Within the Proposed Mine Study Area	3-103
3.8-7	Federally Protected Species that Potentially Occur in Kemper and Lauderdale Counties, Mississippi, and Surrounding Areas	3-106
3.8-8	State-Protected Reptiles, Birds of Prey and Mammals	3-109
3.8-9	Vegetation/Land Use Types Identified within the Natural Gas Pipeline Corridor	3-115
3.8-10	Vegetation/Land Use Type Identified within the Reclaimed Effluent Pipeline Not Collocated within the Transmission Line Corridor	3-116
3.8-11	Vegetation /Land Use Types Identified within the Transmission Line Corridors (Both New and Existing)	3-116
3.8-12	Vegetation/Land Use Types Identified within the Substation Sites	3-117
3.8-13	Vegetation /Land Use Types Identified within the CO ₂ Pipeline Line Corridor Not Co-Located With the Transmission Line Corridor	3-117
3.8-14	Wildlife Observed Along Linear Facilities; Kemper, Lauderdale, Jasper, and Clarke Counties, Mississippi (June through November 2008 and September 2009)	3-127
3.8-15	Potential for Occurrence of Listed Wildlife Species Along the Proposed Linear Facility Corridors	3-129
3.9-1	State and Federal Status of Threatened/Endangered Species in Counties of Interest	3-131
3.9-2	Physical/Chemical and Water Quality Data	3-134
3.9-3	HASs, June 2008	3-136
3.9-4	Biological Metrics Data for the Kemper County Sampling Sites	3-137
3.9-5	Fish Data Summary	3-141
3.11-1	Wetland Types on Plant Site	3-150

LIST OF TABLES

<u>Table</u>	<u>Page</u>	
3.11-2	Estimated Acreages for Forested, Shrub, and Herbaceous Wetlands and Open Water	3-153
3.11-3	Categories Used for the Vegetation/Land Use Mapping of the Study Area	3-154
3.11-4	Estimated Acreages of Wetlands and Nonvegetated Areas of Open Water Occurring in the Study Area	3-154
3.11-5	Wetland Types within the Natural Gas Pipeline Study Corridor	3-158
3.11-6	Wetland Types within the Reclaimed Effluent Pipeline Corridor Portion Not Collocated within the Transmission Line Study Corridors	3-160
3.11-7	Wetland Types within the Transmission Line Study Corridors	3-162
3.11-8	Wetland Types within the CO ₂ Pipeline Corridor Portion Not Co-Located with the Transmission Line Corridor	3-164
3.11-9	Wetland Types within the Substation Sites	3-167
3.12-1	Power Plant and Mine Area Land Use	3-169
3.13-2	Population by Race, 2000	3-173
3.13-1	Population	3-173
3.13-3	Employment Data (2000)	3-173
3.13-4	Percentage Employment by Sector	3-174
3.13-5	Income and Poverty Levels	3-174
3.13-6	Household Characteristics, 2000	3-174
3.13-7	Environmental Justice Data for the United States, Mississippi, Kemper County, and Census Tracts within 7-mile Radius of Proposed Plant Site	3-177
3.14-1	Selected Traffic Counts in Kemper and Lauderdale Counties	3-186
3.14-2	Traffic Counts for Initial Lignite Coal Deliveries	3-188
3.14-3	Estimated Traffic Volumes for Roads in the Immediate Power Plant and Mining Area	3-189
3.14-4	Selected Airports Located Within 120 Miles of the Proposed Plant Site and Mine Study Area	3-192
3.18-1	Archaeological Sites Identified by TVAR as Potentially Eligible for NRHP Listing	3-203
3.18-2	Architectural Sites Identified by TVAR as Potentially Eligible for NRHP Listing	3-205

LIST OF TABLES

<u>Table</u>	<u>Page</u>
3.18-3 Archaeological Sites Identified by New South as Eligible or Potentially Eligible for NRHP Listing—CO ₂ Pipeline Corridor	3-207
3.18-4 Architectural Sites Identified by New South as Potentially Eligible for NRHP Listing—CO ₂ Pipeline Corridor	3-207
3.18-5 Archaeological Sites Identified by New South as Potentially Eligible for NRHP Listing—Reclaimed Water Pipeline Corridor	3-210
3.18-6 Architectural Sites Identified by New South as Eligible for NRHP Listing—Reclaimed Water Pipeline Corridor	3-210
3.19-1 Subjective Effect of Changes in Sound Pressure Levels	3-212
3.19-2 Typical Sound Levels and Human Response	3-212
3.19-3 EPA Noise Guidelines to Protect Public Health and Welfare with Adequate Margin of Safety from Undue Effects	3-213
3.19-4 HUD Guidelines for Evaluating Sound Effects on Residential Properties	3-214
3.19-5 Ambient Sound Survey Results (September 17 and 18, 2008)	3-214
3.20-1 Rates of Selected Causes of Death for 2007 (per 100,000 Population)	3-216
4.2-1 Estimated Criteria Pollutant Air Quality Impacts from Power Plant Construction Emissions	4-3
4.2-2 Estimated HAP Pollutant Air Quality Impacts from Power Plant Construction Emissions	4-4
4.2-3 Class II Area SIL Analysis	4-8
4.2-4 NAAQS Impact Analysis	4-9
4.2-5 Class II Area PSD Increment Impact Analysis	4-11
4.2-6 Maximum Predicted Ambient Air Pollutant Concentrations Due to Emissions from the Proposed Facilities Compared to Class I SILs	4-12
4.2-7 NAAQS Analysis of Lignite Mine Operations and IGCC Plant	4-16
4.2-8 PSD Increment Analysis of Lignite Mine Operations and IGCC Plant	4-16
4.2-9 Minimum, Maximum, and Weighted Mean Values for Selected Parameters: Topsoil, Subsoil, Oxidized Overburden, and Unoxidized Overburden	4-22
4.2-10 Meridian WWTP Monthly Average Effluent Discharge—1996 to 2008	4-29
4.2-11 Sowashee Creek Mean Monthly Discharge Data for the Period 1998 through 2008 from USGS Gauging Station 02476500	4-29

LIST OF TABLES

<u>Table</u>	<u>Page</u>
4.2-12 Storm Event Runoff Comparison—Mine Block A	4-31
4.2-13 Storm Event Runoff Comparison—Mine Blocks B and C	4-32
4.2-14 Storm Event Runoff Comparison—Mine Blocks C and D	4-32
4.2-15 Storm Event Runoff Comparison—Mine Blocks C, D, and E	4-33
4.2-16 Storm Event Runoff Comparison—Mine Blocks D, E, and F	4-34
4.2-17 Storm Event Runoff Comparison—Mine Block G	4-35
4.2-18 Storm Event Runoff Comparison—After Mining	4-36
4.2-19 Mass Balance Analysis Results—TDS Concentration	4-39
4.2-20 Measured Discharge and Water Temperature Data Collected at SW-3 and -10 on May 21 and August 13, 2008	4-43
4.2-21 Flow and Water Temperature Data Collected at SW-5, -9, and -12 on May 21 and August 13, 2008	4-43
4.2-22 Length of Stream Channel and Acres of Cover Type within Mine Blocks along the Chickasawhay Creek	4-44
4.2-24 SSTEMP Model Results	4-45
4.2-23 Meteorological Data Used in SSTEMP to Model Stream Segment Water Temperatures	4-45
4.2-25 Worst-Case of JS Dewatering Model Input Parameters	4-53
4.2-26 Input Parameters of JS Dewatering System Based on U.S. Army and Navy Model	4-54
4.2-27 Worst-Case GS Depressurization Model Input Parameters	4-54
4.2-28 SPLP Test Results for Three Lignite Leachate Samples	4-57
4.2-29 Vegetation/Land Use Impacts for the Power Plant Site	4-58
4.2-30 Potential Vegetation/Land Use Impacts Associated with Construction of Linear Facilities	4-63
4.2-31 Summary of Vegetative Cover Cleared in Advance of Mining	4-71
4.2-32 Specific Wetland Impacts—Power Plant Site	4-83
4.2-33 Specific Wetland Impacts—Linear Facilities	4-85
4.2-34 Proposed Wetlands Impacts—Surface Lignite Mine	4-87
4.2-35 Direct-Effect Multipliers—Construction	4-92

LIST OF TABLES

<u>Table</u>	<u>Page</u>
4.2-36 Construction Worker Population Increase	4-92
4.2-37 Direct-Effect Multipliers—Operation	4-94
4.2-38 Potable Water Demand	4-95
4.2-39 Wastewater Generation	4-96
4.2-40 Regional Cancer Rates for 2003 through 2006	4-102
4.2-41 Regional Mortality Rates for 2007	4-103
4.2-42 Regional Heart Disease Rates	4-103
4.2-43 Regional Chronic Lung Disease Rates	4-103
4.2-44 Regional Age Distribution	4-104
4.2-45 Mississippi Power Demographics	4-107
4.2-46 Capacity Analysis—Construction	4-113
4.2-47 Capacity Analysis—Operation	4-116
4.2-48 Capacity Analysis—Initial Lignite Coal Deliveries	4-118
4.2-49 Estimated Sound Levels at the Closest Residential Receptor by Construction Phase	4-127
4.2-50 Maximum Sound Levels from the Kemper County IGCC Plant	4-130
4.2-51 Coal-Mining Equipment Sound Power Levels	4-131
4.2-52 Estimates of Annual Mortality Due to Average Annual Increase in Criteria Air Pollutants	4-137
4.2-53 Lifetime YLL and DLL from an Average Annual Increase in PM _{2.5} Concentration of 0.91 µg/m ³	4-138
4.2-54 Estimates of Increases in Annual Morbidity Effects Due to Estimated Annual Increase in PM ₁₀ and PM _{2.5}	4-138
4.2-55 HAP Emissions for Each of Two IGCC Stacks for Siemens Turbines and EPA Health Risk Criteria for Long-Term Inhalation Exposure	4-141
4.2-56 Maximum Chronic Inhalation Risk Estimates from Kemper County IGCC Project	4-142
4.2-57 Average Kemper Countywide Chronic Inhalation Risk Estimates from Kemper County IGCC Project	4-143
4.2-58 Maximum Acute Inhalation Risk Estimates from Kemper County IGCC Project	4-144

LIST OF TABLES

<u>Table</u>		<u>Page</u>
4.2-59	Physical Characteristics of RGM	4-146
4.2-60	Results for Ammonia Accidental Release Scenarios	4-149
4.2-61	Results for CO ₂ Pipeline Accidental Release Scenarios	4-153
5.0-1	Pollution Prevention and Mitigation Measures Developed for the Proposed Kemper County IGCC Project Facilities	5-3
6.2-1	Mississippi 2008 Adopted Section 303(d) List of Impaired Streams in the Pascagoula River Basin	6-14
6.2-2	Mississippi Proposed Draft 2010 Section 303(d) List of Impaired Streams in the Pascagoula River Basin	6-14
6.2.3	List of TMDLs Completed by MDEQ for Water Bodies in the Pascagoula River Basin	6-16
6.2-4	Current Land Use/Land Cover	6-19
6.2-5	Okatibbee Dam Minimum Discharges	6-22
6.2-6	Current Land Use/Land Cover—Upper Chickasawhay River	6-27
7.1-1	Summary of Federal Permits and Licenses Required for the Kemper County IGCC Project, Lignite Surface Mine, or Linear Facilities	7-2

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
2.1-1	Location of the Proposed Kemper County IGCC Project Site	2-2
2.1-2	Topography of the Proposed Kemper County IGCC Project Site	2-3
2.1-3	Aerial Photograph of the Proposed Kemper County IGCC Project Site	2-4
2.1-4	Proposed Power Plant Site Buffer Areas	2-5
2.1-5	Process Flow Diagram of Proposed Kemper County IGCC Project	2-6
2.1-7	Concept Rendering of the Proposed IGCC Project Facilities	2-8
2.1-6	Planned Arrangement of Equipment and Facilities on the Kemper County IGCC Project Site	2-9
2.1-8	Side View of a Gasifier	2-10
2.1-9	Typical Flare Derrick with a Single Flare	2-14
2.1-10	Conceptual Schematic of a Combined-Cycle System	2-14
2.2-2	Proposed Connected Actions in the Vicinity of Meridian	2-17
2.2-1	Locations of Proposed Connected Actions	2-18
2.2-3	2008 Aerial Photograph of Mine Study Area and Power Plant Site	2-20
2.2-4	Conceptual Life-of-Mine Plan for Liberty Fuels Mine	2-22
2.2-5	Design Details for H-Frame Transmission Line Structure	2-26
2.3-2	Initial Mining Area Water Management	2-32
2.3-3	Photograph of Diversion Channel at NACC's Red Hills Mine	2-33
2.3-4	Stages of Pipeline Construction	2-36
2.4-1	Typical Mining Sequence	2-39
2.5-1	Areas of Kemper County IGCC Project Site Potentially Impacted	2-58
2.5-2	Overall IGCC Plant Water Balance	2-59
2.7-1	Lignite Bearing Strata of Mississippi, Alabama, and Tennessee	2-79
2.7-2	Alternative Mine Plan "A"	2-87
2.7-3	Alternative Mine Plan "B"	2-88
2.7-4	Alternative Mine Plan "C"	2-90

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
3.3-1	5-year Wind Rose for Meridian Key Field Airport (1991 to 1995) 3-3
3.3-2	Location of Ambient Air Quality Monitors 3-6
3.3-3	AQI Charts for Lauderdale County—2006 through 2008 3-9
3.3-4	Existing Emissions in Kemper and Lauderdale Counties (2001) 3-14
3.4-1	Surface Geology Map of Mississippi 3-17
3.4-2	Physiographic Provinces of Mississippi 3-20
3.4-3	Subsurface Structural Features of Mississippi 3-22
3.4-4	Regional Geologic Cross-Section 3-23
3.4-5	Location of Geologic Cross-Section A-A' 3-24
3.4-6	Shallow Stratigraphy in the Mine Study Area 3-27
3.4-7	Structural Contour Map on Top of Cretaceous 3-30
3.4-8	Structural Features of Mississippi 3-31
3.4-9	Tectonic Map near Project Area 3-32
3.4-10	Station Map for the Mid-America Region of the ANSS 3-34
3.5-1	Soils Distribution for the Proposed Project Area 3-39
3.5-2	Geographic Locations of Soil Map Units 3-42
3.6-1	Watershed Basins and Sub-Basins in the Project Area 3-49
3.6-2	Surface Waters in the Vicinity of the Proposed Power Plant and Mine Study Area 3-55
3.7-1	Hydrogeologic Cross-Section Schematic 3-64
3.7-2	Water Well Location and the Aquifers Used for Water Supply 3-66
3.7-3	Locations of Water Wells in the Mine Study Area and Surroundings 3-69
3.7-4	Locations of Springs in the Mine Study Area and Surroundings 3-70
3.7-5	Water Level Elevations 3-76
3.8-1	Vegetation/Land Use Types Identified Within the Power Plant Site 3-82
3.9-1	Stream Assessment Study Site Locations 3-133

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
3.9-2 Cluster Analysis for Sampling Sites	3-138
3.11-1 Spatial Distribution of Wetlands	3-151
3.12-1 Land Use	3-170
3.12-2 Land Use	3-171
3.13-1 Census Tracts within a 7-Mile Radius of the Proposed Plant Site	3-178
3.13-2 Native American Reservation Lands in the Vicinity of the Project Area	3-180
3.14-1 Road Map Showing Selected Traffic Volume Monitoring Locations	3-182
3.14-2 Selected Traffic Volume Monitoring Locations, Initial Lignite Coal Delivery Route	3-185
3.14-3 Airports and Railroads in the Vicinity of Proposed Kemper County IGCC Project Area	3-191
3.18-1 Listed Historic Places in the Project Counties	3-198
3.18-2 Front View of Goldman House	3-199
3.18-3 Potential Mining Area Boundary and Areas Surveyed	3-200
3.18-4 Chickachae Combed Vessel Fragment Recovered from Shovel Testing at Field Site Km002	3-203
3.19-1 Ambient Sound Survey Locations	3-215
3.20-1 The Electromagnetic Spectrum	3-219
3.20-2 Existing Electrical Transmission Lines	3-221
4.2-1 Massive Sand (Layer 5) Active Cell Extension toward the Southwest over the Site Proposed Wells Located Southwest of the Saltwater-Freshwater Interface	4-50
4.2-2 Predicted Drawdown in the Massive Sand (Layer 5) at the End of 40 Years of Pumping Based on 1.0 MGD Total Withdrawal from the Massive Sand	4-51
4.2-3 Vegetation/Land Use Impacts on the IGCC Power Plant Site	4-60
4.2-4 Impact of Mining Block E on Okatibbee Floodplain	4-81
4.2-5 Cumulative Net Rate Impact of Kemper County IGCC Alternative	4-97
4.2-6 Estimated Number of Emergency Department Visits with Asthma as First Diagnosis per 10,000 Population—Mississippi 2003 to 2005	4-102
4.2-7 Distribution of Traffic—Construction (a.m. Shift)	4-111

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
4.2-8	Distribution of Traffic—Operation (a.m. or p.m. Peak Hour)	4-115
4.2-9	Initial Lignite Coal Delivery Route Distribution of Traffic	4-117
4.2-10	Sensitive Receiver Locations near Kemper County IGCC Plant	4-129
4.2-11	Maximum Sound Levels at the Kemper County IGCC Plant (L_{eq})	4-130
4.2-12	Maximum Sound Levels from Surface Mining Operations and IGCC Power Plant Noise	4-132
4.4-1	Predicted Drawdown in the Massive Sand (Layer 5) at the End of 40 Years of Pumping Based on 6.5-MGD Total Withdrawal from the Massive Sand	4-157
6.2-1	Pascagoula River Basin	6-10
6.2-2	Stream Segment Impairment Status	6-13
6.2-3	Pascagoula Basin Land Cover	6-18
6.2-4	Land Use in the Upper Reaches of the Chickasawhay River	6-26