

**TABLE OF CONTENTS**

**North Baja Pipeline Expansion Project  
Draft Environmental Impact Statement/Environmental Impact Report and  
Draft Land Use Plan Amendment**

<u>VOLUME I</u>	<u>Page</u>
TABLE OF CONTENTS .....	i
LIST OF APPENDICES .....	vii
LIST OF TABLES .....	viii
LIST OF FIGURES .....	xi
ACRONYMS AND ABBREVIATIONS .....	xii
EXECUTIVE SUMMARY .....	ES-1
DESCRIPTION OF THE PROPOSED PROJECT AND PROJECT OBJECTIVES.....	ES-1
PUBLIC INVOLVEMENT AND AREAS OF CONCERN .....	ES-3
ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES.....	ES-5
ALTERNATIVES CONSIDERED .....	ES-24
ENVIRONMENTALLY SUPERIOR ALTERNATIVE.....	ES-26
MAJOR CONCLUSIONS .....	ES-26
1.0 INTRODUCTION .....	1-1
1.1 PROJECT OBJECTIVES, PURPOSE, AND NEED .....	1-1
1.2 PURPOSE AND SCOPE OF THIS EIS/EIR .....	1-6
1.2.1 Federal Energy Regulatory Commission .....	1-7
1.2.2 California State Lands Commission .....	1-8
1.2.3 Bureau of Land Management and Bureau of Reclamation.....	1-9
1.2.4 Responsible and Trustee Agencies .....	1-9
1.3 PUBLIC REVIEW AND COMMENT.....	1-10
1.4 NONJURISDICTIONAL FACILITIES .....	1-15
1.4.1 Background.....	1-15
1.4.2 Conclusions.....	1-18
1.5 CONSISTENCY WITH REGIONAL AND LOCAL PLANS.....	1-20
1.5.1 Bureau of Land Management .....	1-20
1.5.2 U.S. Fish and Wildlife Service .....	1-22
1.5.3 Counties and Municipalities .....	1-23
1.6 PERMITS, APPROVALS, CONSULTATIONS, AND REGULATORY REQUIREMENTS.....	1-23
1.7 BUREAU OF LAND MANAGEMENT PLAN AMENDMENT PROCESS .....	1-28
1.7.1 Regulatory Requirements .....	1-28
1.7.2 Need for Plan Amendments.....	1-28
1.7.3 Identification of Issues.....	1-30
1.7.4 Planning Criteria .....	1-30
1.7.5 Alternatives Considered in the Analysis.....	1-31
1.7.6 Agency Coordination.....	1-31
1.7.7 Public Participation.....	1-31

TABLE OF CONTENTS (cont'd)

2.0	PROJECT DESCRIPTION.....	2-1
2.1	PROPOSED FACILITIES.....	2-1
	2.1.1 Pipeline Facilities.....	2-1
	2.1.2 Aboveground Facilities.....	2-3
2.2	LAND REQUIREMENTS.....	2-4
	2.2.1 Pipeline Facilities.....	2-7
	2.2.2 Aboveground Facilities.....	2-9
	2.2.3 Pipe Storage and Contractor Yards.....	2-10
	2.2.4 Access Roads.....	2-10
2.3	CONSTRUCTION PROCEDURES.....	2-11
	2.3.1 General Pipeline Construction Procedures.....	2-12
	2.3.2 Special Construction Techniques.....	2-16
	2.3.3 Aboveground Facility Construction Procedures.....	2-24
2.4	CONSTRUCTION SCHEDULE.....	2-24
2.5	ENVIRONMENTAL COMPLIANCE INSPECTION AND MITIGATION MONITORING.....	2-24
2.6	OPERATION, MAINTENANCE, AND SAFETY CONTROLS.....	2-28
2.7	FUTURE PLANS AND ABANDONMENT.....	2-29
3.0	ALTERNATIVES.....	3-1
3.1	FACTORS USED IN THE SELECTION OF ALTERNATIVES.....	3-1
	3.1.1 Alternatives Development and Screening Process.....	3-1
	3.1.2 Alternatives Screening Methodology.....	3-1
	3.1.3 Summary of Screening Results.....	3-2
3.2	ALTERNATIVES CONSIDERED.....	3-2
	3.2.1 No Project Alternative.....	3-2
	3.2.2 System Alternatives.....	3-5
	3.2.2.1 Other Existing Pipeline Systems.....	3-6
	3.2.2.2 Pipelines From Other Onshore and Offshore LNG Projects Proposed in California.....	3-7
	3.2.3 Route Alternatives.....	3-8
	3.2.3.1 B-Line Route Alternatives.....	3-8
	3.2.3.2 IID Lateral Route Alternatives.....	3-10
	3.2.4 Route Variations.....	3-22
	3.2.4.1 East Mesa North Route Variation.....	3-22
	3.2.4.2 Imperial Valley Route Variations.....	3-24
	3.2.5 Alternative Delivery Points - Arrowhead Alternative.....	3-26
	3.2.6 Aboveground Facility Alternatives.....	3-31
4.0	ENVIRONMENTAL ANALYSIS.....	4-1
4.1	GEOLOGY.....	4-3
	4.1.1 Significance Criteria.....	4-3
	4.1.2 Geologic Setting.....	4-3
	4.1.3 Mineral Resources.....	4-8
	4.1.4 Geologic Hazards.....	4-9
	4.1.5 Paleontological Resources.....	4-22
	4.1.6 Arrowhead Alternative.....	4-27
	4.1.7 No Project Alternative.....	4-27

TABLE OF CONTENTS (cont'd)

4.2	SOILS .....	4-28
	4.2.1 Significance Criteria .....	4-28
	4.2.2 Existing Soil Resources .....	4-28
	4.2.3 General Impact and Mitigation .....	4-35
	4.2.4 Site-specific Impact and Mitigation.....	4-39
	4.2.5 Arrowhead Alternative .....	4-41
	4.2.6 No Project Alternative .....	4-42
4.3	WATER RESOURCES .....	4-43
	4.3.1 Significance Criteria .....	4-43
	4.3.2 Groundwater Resources .....	4-43
	4.3.2.1 Existing Groundwater Resources.....	4-43
	4.3.2.2 General Impact and Mitigation .....	4-45
	4.3.2.3 Water Supply Wells.....	4-47
	4.3.2.4 Groundwater Uses During Construction.....	4-48
	4.3.3 Surface Water Resources .....	4-48
	4.3.3.1 Existing Surface Water Resources.....	4-48
	4.3.3.2 General Impact and Mitigation .....	4-52
	4.3.3.3 Major and Sensitive Waterbodies .....	4-56
	4.3.3.4 Surface Water Uses During Construction.....	4-57
	4.3.3.5 Streambed Alteration Agreement .....	4-58
	4.3.4 Arrowhead Alternative .....	4-60
	4.3.5 No Project Alternative .....	4-61
4.4	WETLANDS .....	4-62
	4.4.1 Significance Criteria .....	4-62
	4.4.2 Existing Wetland Resources .....	4-62
	4.4.3 General Impact and Mitigation .....	4-64
	4.4.4 Site-specific Impact and Mitigation.....	4-67
	4.4.5 Arrowhead Alternative .....	4-68
	4.4.6 No Project Alternative .....	4-68
4.5	VEGETATION.....	4-69
	4.5.1 Significance Criteria .....	4-69
	4.5.2 Existing Vegetation Resources .....	4-69
	4.5.3 General Impact and Mitigation .....	4-71
	4.5.4 Vegetation Communities of Special Concern or Value.....	4-80
	4.5.5 Noxious Weeds and Other Invasive Plants.....	4-80
	4.5.6 Arrowhead Alternative .....	4-83
	4.5.7 No Project Alternative .....	4-83
4.6	WILDLIFE AND AQUATIC RESOURCES.....	4-84
	4.6.1 Significance Criteria .....	4-84
	4.6.2 Wildlife.....	4-84
	4.6.2.1 Existing Wildlife Resources .....	4-84
	4.6.2.2 General Impact and Mitigation .....	4-86
	4.6.2.3 Migratory Birds .....	4-88
	4.6.2.4 Sensitive or Managed Wildlife Habitats and Species.....	4-90
	4.6.3 Aquatic Resources .....	4-92
	4.6.3.1 Existing Aquatic Resources.....	4-92
	4.6.3.2 General Impact and Mitigation .....	4-93
	4.6.3.3 Site-specific Impact and Mitigation.....	4-94

TABLE OF CONTENTS (cont'd)

4.6.4	Arrowhead Alternative .....	4-95
4.6.5	No Project Alternative .....	4-95
4.7	<b>SPECIAL STATUS SPECIES.....</b>	<b>4-97</b>
4.7.1	Significance Criteria .....	4-97
4.7.2	Regulatory Requirements and Species Identification .....	4-97
4.7.3	General Impact and Mitigation .....	4-98
4.7.4	Federally Listed Threatened and Endangered Species .....	4-105
	4.7.4.1 Southwestern Willow Flycatcher .....	4-105
	4.7.4.2 Yuma Clapper Rail .....	4-107
	4.7.4.3 Desert Tortoise.....	4-108
	4.7.4.4 Razorback Sucker .....	4-112
	4.7.4.5 Peirson's Milk-vetch.....	4-112
4.7.5	State-listed Threatened and Endangered Species .....	4-114
	4.7.5.1 Arizona Bell's Vireo .....	4-114
	4.7.5.2 California Black Rail .....	4-114
	4.7.5.3 Gila Woodpecker .....	4-115
	4.7.5.4 Western Yellow-billed Cuckoo .....	4-116
	4.7.5.5 Algodones Dune Sunflower.....	4-116
	4.7.5.6 Wiggins's Croton.....	4-117
4.7.6	Other Special Status Species.....	4-117
	4.7.6.1 Colorado River Cotton Rat .....	4-117
	4.7.6.2 Desert Bighorn Sheep .....	4-118
	4.7.6.3 Brown-crested Flycatcher .....	4-118
	4.7.6.4 Burrowing Owl .....	4-119
	4.7.6.5 Crissal Thrasher .....	4-120
	4.7.6.6 Ferruginous Hawk .....	4-121
	4.7.6.7 Le Conte's Thrasher .....	4-121
	4.7.6.8 Summer Tanager.....	4-122
	4.7.6.9 Vermilion Flycatcher .....	4-122
	4.7.6.10 Yellow-breasted Chat .....	4-123
	4.7.6.11 Colorado River Toad .....	4-124
	4.7.6.12 Couch's Spadefoot Toad.....	4-124
	4.7.6.13 Flat-tailed Horned Lizard.....	4-125
	4.7.6.14 Fairyduster .....	4-127
	4.7.6.15 Giant Spanish-needle .....	4-127
	4.7.6.16 Sand Food .....	4-128
4.7.7	Cumulative, Interdependent, and Interrelated Effects .....	4-128
4.7.8	Summary of Determinations of Effect for Federally Listed Species .....	4-129
4.7.9	Arrowhead Alternative .....	4-131
4.7.10	No Project Alternative .....	4-132
4.8	<b>LAND USE, SPECIAL MANAGEMENT AREAS, RECREATION AND PUBLIC INTEREST AREAS, AND AESTHETIC RESOURCES .....</b>	<b>4-133</b>
4.8.1	Significance Criteria .....	4-133
4.8.2	Land Use and Ownership.....	4-134
4.8.3	Existing Residences and Planned Developments .....	4-141
	4.8.3.1 Existing Residences .....	4-141
	4.8.3.2 Planned Developments .....	4-147

TABLE OF CONTENTS (cont'd)

4.8.4	Special Management Areas .....	4-148
	4.8.4.1 California Desert Conservation Area.....	4-148
	4.8.4.2 Milpitas Wash Special Management Area.....	4-150
	4.8.4.3 Imperial Sand Dunes Recreation Area.....	4-151
4.8.5	Recreation and Public Interest Areas .....	4-152
4.8.6	Hazardous Waste Sites.....	4-160
4.8.7	Aesthetic Resources .....	4-160
4.8.8	Arrowhead Alternative .....	4-166
4.8.9	No Project Alternative .....	4-168
4.9	SOCIOECONOMICS .....	4-169
4.9.1	Significance Criteria .....	4-169
4.9.2	Population, Economy, and Employment .....	4-169
4.9.3	Housing.....	4-171
4.9.4	Public Services.....	4-173
4.9.5	Property Values.....	4-175
4.9.6	Tax Revenues.....	4-176
4.9.7	Arrowhead Alternative .....	4-177
4.9.8	No Project Alternative .....	4-177
4.10	TRANSPORTATION AND TRAFFIC.....	4-178
4.10.1	Significance Criteria .....	4-178
4.10.2	Construction Across and Within Roadways and Railroads .....	4-178
4.10.3	Increased Vehicle Traffic.....	4-184
4.10.4	Arrowhead Alternative .....	4-186
4.10.5	No Project Alternative .....	4-186
4.11	CULTURAL RESOURCES .....	4-187
4.11.1	Significance Criteria .....	4-187
4.11.2	Regulatory Requirements .....	4-187
4.11.3	Cultural Resources Assessment .....	4-188
4.11.4	Unanticipated Discovery Plan .....	4-190
4.11.5	Native American Consultation.....	4-190
4.11.6	General Impact and Mitigation .....	4-193
4.11.7	Arrowhead Alternative .....	4-195
4.11.8	No Project Alternative .....	4-195
4.12	AIR QUALITY .....	4-197
4.12.1	Significance Criteria .....	4-197
4.12.2	Existing Air Quality.....	4-197
4.12.3	Regulatory Requirements .....	4-199
4.12.4	Air Emission Impacts and Mitigation .....	4-202
4.12.5	Health Risk Assessment.....	4-207
4.12.6	Arrowhead Alternative .....	4-207
4.12.7	No Project Alternative .....	4-207
4.13	NOISE.....	4-209
4.13.1	Significance Criteria .....	4-209
4.13.2	Existing Noise Levels .....	4-209
4.13.3	Regulatory Requirements .....	4-210
4.13.4	Noise Level Impacts and Mitigation.....	4-211
4.13.5	Arrowhead Alternative .....	4-213
4.13.6	No Project Alternative .....	4-213

TABLE OF CONTENTS (cont'd)

4.14	RELIABILITY AND SAFETY .....	4-214
	4.14.1 Significance Criteria .....	4-214
	4.14.2 Safety Standards .....	4-214
	4.14.3 Pipeline Accident Data .....	4-221
	4.14.4 Impact on Public Safety .....	4-223
	4.14.5 Terrorism .....	4-225
	4.14.6 Arrowhead Alternative .....	4-226
	4.14.7 No Project Alternative .....	4-226
4.15	CUMULATIVE IMPACTS.....	4-228
	4.15.1 Geology and Soils.....	4-228
	4.15.2 Waterbodies and Wetlands .....	4-230
	4.15.3 Vegetation, Wildlife and Habitat, and Aquatic Resources .....	4-230
	4.15.4 Land Use, Special Management Areas, Recreation and Public Interest Areas, and Aesthetic Resources .....	4-232
	4.15.5 Socioeconomics .....	4-233
	4.15.6 Transportation and Traffic .....	4-234
	4.15.7 Cultural Resources .....	4-234
	4.15.8 Air Quality .....	4-234
	4.15.9 Noise .....	4-240
	4.15.10 Reliability and Safety.....	4-240
	4.15.11 Environmental Justice.....	4-241
	4.15.12 Conclusion .....	4-241
	4.15.13 Arrowhead Alternative .....	4-241
	4.15.14 No Project Alternative .....	4-241
4.16	GROWTH-INDUCING IMPACTS.....	4-242
4.17	ENVIRONMENTAL JUSTICE .....	4-245
	4.17.1 Significance Criteria .....	4-245
	4.17.2 Background and Regulatory Setting .....	4-245
	4.17.3 Identification of Affected Area for Environmental Justice Analysis.....	4-246
	4.17.4 Demographic and Economic Data .....	4-249
	4.17.4.1 Minority Population .....	4-250
	4.17.4.2 Income Distribution in the Project Area .....	4-253
	4.17.5 Impact Analysis .....	4-254
	4.17.6 Arrowhead Alternative .....	4-255
	4.17.7 No Project Alternative .....	4-257
5.0	CONCLUSIONS AND RECOMMENDATIONS .....	5-1
	5.1 SUMMARY OF THE STAFFS' ENVIRONMENTAL ANALYSIS .....	5-1
	5.2 ALTERNATIVES CONSIDERED .....	5-2
	5.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE.....	5-3
	5.4 SIGNIFICANT UNAVOIDABLE IMPACTS/STATEMENT OF OVERRIDING CONSIDERATIONS.....	5-4
	5.5 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES; SHORT- AND LONG-TERM USES OF THE ENVIRONMENT .....	5-4
	5.6 FERC AND CSLC STAFFS' RECOMMENDED MITIGATION .....	5-5

TABLE OF CONTENTS (cont'd)

VOLUME II – APPENDICES

APPENDIX A	DRAFT EIS/EIR AND DRAFT LAND USE PLAN AMENDMENT DISTRIBUTION LIST FOR THE NORTH BAJA PIPELINE EXPANSION PROJECT
APPENDIX B	FACILITY LOCATION MAPS
APPENDIX C	TYPICAL RIGHT-OF-WAY CROSS SECTIONS
APPENDIX D	TEMPORARY EXTRA WORKSPACES AND ACCESS ROADS ASSOCIATED WITH THE NORTH BAJA PIPELINE EXPANSION PROJECT
APPENDIX E	CONSTRUCTION MITIGATION AND RESTORATION PLAN
APPENDIX F	SPILL PREVENTION, CONTAINMENT, AND CONTROL PLAN FOR HAZARDOUS MATERIALS AND WASTES
APPENDIX G	HORIZONTAL DIRECTIONAL DRILL PLAN
APPENDIX H	TRAFFIC MANAGEMENT PLANS
APPENDIX I	BLASTING SPECIFICATIONS
APPENDIX J	GEOLOGIC HAZARDS STUDY
APPENDIX K	PALEONTOLOGICAL RESOURCE MITIGATION AND MONITORING PLAN
APPENDIX L	DUST CONTROL PLAN
APPENDIX M	DRY WASHES CROSSED BY THE NORTH BAJA PIPELINE EXPANSION PROJECT
APPENDIX N	FIRE PREVENTION AND SUPPRESSION PLAN
APPENDIX O	SITE-SPECIFIC RESIDENTIAL CONSTRUCTION MITIGATION PLANS
APPENDIX P	OFF-HIGHWAY VEHICLE MANAGEMENT PLAN
APPENDIX Q	VISUAL RESOURCE STUDY
APPENDIX R	REFERENCES AND CONTACTS
APPENDIX S	LIST OF PREPARERS

## TABLES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1.1-1	North Baja Pipeline Expansion Project Precedent Agreements.....	1-6
1.3-1	Issues/Impacts Identified and Comments Received During the Public Scoping Process for the North Baja Pipeline Expansion Project.....	1-11
1.6-1	Major Permits, Approvals, and Consultations for the North Baja Pipeline Expansion Project .....	1-24
2.1.1-1	Pipeline Facilities Associated with the North Baja Pipeline Expansion Project .....	2-3
2.1.2-1	Aboveground Facilities Associated with the North Baja Pipeline Expansion Project.....	2-4
2.2-1	Summary of Land Requirements Associated with the North Baja Pipeline Expansion Project .....	2-5
2.2.1-1	Location of Adjacent Existing Rights-of-Way in Relation to the Proposed Pipeline Facilities.....	2-8
2.2.3-1	Pipe Storage and Contractor Yards Associated with the North Baja Pipeline Expansion Project .....	2-10
3.2.1-1	Comparison of Air Emissions from Burning Fossil Fuels .....	3-5
3.2.2-1	Proposed LNG Import Terminals and Pipelines in California.....	3-7
3.2.3-1	Environmental Comparison of the 22 <sup>nd</sup> Avenue Alternative with the Proposed Route MPs 3.0 to 14.5 .....	3-10
3.2.3-2	Environmental Comparison of the Corridor L Alternative with the Proposed Route MPs 16.3 to 27.3 .....	3-14
3.2.3-3	Environmental Comparison of the Bonds Corner Alternative with the Proposed Route MPs 16.3 to 31.5 .....	3-16
3.2.5-1	Environmental Comparison of the Arrowhead Alternative with the Corresponding Segment of the Proposed Project .....	3-30
4.1.2-1	Geologic and Physiographic Conditions Crossed by the North Baja Pipeline Expansion Project Facilities.....	4-6
4.1.3-1	Mineral Resources and Mining Areas in the Vicinity of the North Baja Pipeline Expansion Project .....	4-9
4.1.4-1	Earthquakes within 62 Miles of the North Baja Pipeline Expansion Project with Magnitudes Greater Than or Equal to 5.0.....	4-11
4.1.4-2	Active Faults in the Vicinity of the IID Lateral .....	4-13
4.1.4-3	Earthquake Fault Zones in Relation to the Nearest Proposed IID Lateral Valve Locations.....	4-18
4.1.5-1	Paleontological Sensitivity of Stratigraphic Units Found Along the North Baja Pipeline Expansion Project .....	4-25
4.1.5-2	Paleontological Resources Discovered During Construction of the A-Line .....	4-25
4.2.2-1	Soil Characteristics Associated with the North Baja Pipeline Expansion Project .....	4-32
4.2.2-2	Prime Farmland and Farmlands of Statewide and Local Importance Affected by the North Baja Pipeline Expansion Project.....	4-34
4.3.2-1	Water Wells Within 150 Feet of the Centerline of the Pipeline Facilities Associated with the North Baja Pipeline Expansion Project .....	4-47
4.3.3-1	Perennial Waterbodies, Canals, and Drains Crossed by the North Baja Pipeline Expansion Project .....	4-50
4.3.3-2	Hydrostatic Test Water Requirements for the North Baja Pipeline Expansion Project .....	4-58
4.4.2-1	Wetlands Crossed by the North Baja Pipeline Expansion Project.....	4-63
4.5.2-1	Vegetation Communities Affected by the North Baja Pipeline Expansion Project.....	4-70

TABLES (cont'd)

Number	Title	Page
4.5.3-1	Acres of Vegetation Communities Affected by the Pipeline Facilities Associated with the North Baja Pipeline Expansion Project.....	4-73
4.5.3-2	Locations Along the B-Line Where the Construction Right-of-Way Would be Reduced to 80 Feet to Minimize Tree Clearing.....	4-76
4.6.2-1	Wildlife Species by Habitat Type Common in the North Baja Pipeline Expansion Project Area .....	4-85
4.7.2-1	Special Status Species Initially Identified as Potentially Occurring in the Vicinity of the North Baja Pipeline Expansion Project .....	4-99
4.7.8-1	Summary of Assessment of Project Impacts on Listed Species .....	4-130
4.8.2-1	Acres of Land Affected by Construction and Operation of the North Baja Pipeline Expansion Project .....	4-135
4.8.2-2	Land Uses Crossed by the Pipeline Facilities Associated with the North Baja Pipeline Expansion Project (miles).....	4-137
4.8.2-3	Summary of Land Ownership Crossed by the North Baja Pipeline Expansion Project (miles).....	4-139
4.8.2-4	Aboveground Facilities Associated with the North Baja Pipeline Expansion Project .....	4-140
4.8.3-1	Residences and Businesses Within 100 Feet of the Construction Work Area Associated with the North Baja Pipeline Expansion Project .....	4-143
4.8.5-1	Recreation and Public Interest Areas Crossed by or Adjacent to the North Baja Pipeline Expansion Project.....	4-153
4.8.8-1	Land Use Affected by Construction and Operation of the Arrowhead Alternative.....	4-167
4.9.2-1	Existing Socioeconomic Conditions in the North Baja Pipeline Expansion Project Study Area .....	4-170
4.9.2-2	Anticipated Construction Workforce for the North Baja Pipeline Expansion Project .....	4-171
4.9.3-1	2000 Housing Characteristics in the North Baja Pipeline Expansion Project Study Area .....	4-172
4.9.3-2	2000 Temporary Housing Characteristics in the North Baja Pipeline Expansion Project Study Area .....	4-172
4.9.6-1	Estimated Property Tax Payments for Facilities Associated with the North Baja Pipeline Expansion Project .....	4-176
4.9.6-2	Estimated Sales Tax Revenue Generated by the North Baja Pipeline Expansion Project .....	4-176
4.10.2-1	Named Roads Crossed by the North Baja Pipeline Expansion Project .....	4-179
4.10.3-1	Major Roadways Potentially Affected by the North Baja Pipeline Expansion Project .....	4-184
4.10.3-2	Anticipated Construction Traffic Associated with the North Baja Pipeline Expansion Project .....	4-185
4.11.5-1	North Baja's Native American Consultations Conducted for the North Baja Pipeline Expansion Project .....	4-191
4.12.2-1	Federal and State Air Quality Standards and Existing Air Quality in the Project Area .....	4-198
4.12.3-1	Fugitive Emissions (Dust) Rules .....	4-202
4.12.4-1	Estimated Emissions of Criteria Pollutants from Project Construction by Year .....	4-203
4.13.3-1	Stationary Source Land Use Noise Standards for Riverside County .....	4-210
4.13.3-2	Noise Standards for Imperial County .....	4-211

TABLES (cont'd)

4.13.4-1	Typical Noise Levels from Construction Equipment and Operations .....	4-212
4.14.3-1	Natural Gas Service Incidents by Cause .....	4-222
4.14.3-2	Outside Forces Incidents by Cause (1970-1984) .....	4-222
4.14.3-3	External Corrosion by Level of Control (1970-1984) .....	4-223
4.14.4-1	Annual Average Fatalities - Natural Gas Transmission and Gathering Systems.....	4-223
4.14.4-2	Nationwide Accidental Deaths .....	4-224
4.14.4-3	Preliminary Identification of High Consequence Areas (HCAs) Crossed by the North Baja Pipeline Expansion Project.....	4-225
4.15-1	Existing or Proposed Activities Cumulatively Affecting Resources of Concern for the North Baja Pipeline Expansion Project .....	4-229
4.15.8-1	Phase I Algodones Compressor Station Impacts .....	4-236
4.15.8-2	LRPC and TDM Plant Estimated Impacts .....	4-237
4.15.8-3	Cumulative Estimated Emissions by Site .....	4-238
4.15.8-4	Resultant Estimated Impacts at Maximum U.S. Receptor Locations .....	4-238
4.15.8-5	Existing and Future Potential Risks .....	4-240
4.17.2-1	Major Laws, Regulatory Requirements, Policies, and Plans for Environmental Justice .....	4-247
4.17.3-1	Potential Impact Radius Associated with the North Baja Pipeline Expansion Project .....	4-249
4.17.3-2	Unpopulated Census Blocks within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project.....	4-249
4.17.4-1	Summary of Racial and Ethnic Demographics within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project .....	4-250
4.17.4-2	Populated Census Blocks Containing Hispanic or Latino Populations within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project in Imperial County.....	4-251
4.17.4-3	Populated Census Blocks Containing American Indian or Alaska Native Populations within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project in La Paz County .....	4-252
4.17.4-4	Populated Census Blocks Containing American Indian, Alaska Native, Native Hawaiian, and Other Pacific Islander Populations within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project in Riverside County .....	4-252
4.17.4-5	Summary of Income Distribution within the Potential Impact Radius Associated with the North Baja Pipeline Expansion Project .....	4-254
4.17.6-1	Summary of Racial and Ethnic Demographics within the Potential Impact Radius Associated with the Arrowhead Alternative .....	4-256
4.17.6-2	Populated Census Blocks and American Indian or Alaska Native Populations within the Potential Impact Radius Associated with the Arrowhead Alternative.....	4-256
5.1-1	Mitigation Monitoring Program for the North Baja Pipeline Expansion Project .....	5-12

## FIGURES

<u>Number</u>	<u>Title</u>	<u>Page</u>
ES-1	Locations Requiring a BLM Plan Amendment.....	ES-15
1.4-1	North Baja System and Upstream Mexican Facilities .....	1-16
1.7.2-1	Locations Requiring a BLM Plan Amendment.....	1-29
2.1-1	Project Overview Map .....	2-2
2.3.1-1	Typical Pipeline Construction Sequence .....	2-13
2.3.2-1	Conceptual HDD Waterbody Crossing.....	2-19
2.3.2-2	Typical Canal/Drain Crossings for 18 <sup>th</sup> Avenue .....	2-20
2.3.2-3	Typical Open-Cut Drain Crossing .....	2-21
3.2.3-1	22 <sup>nd</sup> Avenue Route Alternative .....	3-9
3.2.3-2	IID Lateral U.S. Route Alternatives Overview .....	3-11
3.2.3-3	Corridor L and Bonds Corner Route Alternatives .....	3-13
3.2.3-4	ISDRA Siting Factors .....	3-18
3.2.3-5	ISDRA Route Alternatives .....	3-19
3.2.3-6	Gasoducto Bajanorte Pipeline Route Alternative .....	3-21
3.2.4-1	East Mesa North Route Variation .....	3-23
3.2.4-2	Imperial Valley Route Variations .....	3-25
3.2.5-1	Arrowhead Alternative .....	3-28
4.1.2-1	Principal Faults of the Colorado Desert Province and Seismic Activity Near the Project Area .....	4-4
4.1.4-1	Probabilistic Seismic Hazard Map.....	4-15
4.2.2-1	Map Unit Identifiers Crossed by the B-Line.....	4-29
4.2.2-2	Map Unit Identifiers Crossed by the IID Lateral .....	4-30
4.8.4-1	Location of Special Management Areas in Relation to BLM Land and the Proposed Pipeline Routes .....	4-149

## ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
ACECs	Areas of Critical Environmental Concern
ACEEE	American Council for an Energy Efficient Economy
ACHP	Advisory Council on Historic Preservation
ADEQ	Arizona Department of Environmental Quality
Agency Staffs	The environmental staffs of the FERC, the CSLC, and the BLM
AGFD	Arizona Game and Fish Department
amsl	above mean sea level
AQMD	Air Quality Management District
AQCRs	Air Quality Control Regions
AREMA	American Railway Engineering and Maintenance of Way Association
BA	Biological Assessment
BACT	Best Available Control Technology
BEI Lateral	Blythe Energy Interconnect Lateral
BLM	Bureau of Land Management
BO	Biological Opinion
BOR	Bureau of Reclamation
Bscfd	billion standard cubic feet per day
CAA	Clean Air Act
CalTrans	California Department of Transportation
CDC	California Department of Conservation
CDCA Plan	California Desert Conservation Area Plan
CDD	California Desert District
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEPA	California Environmental Protection Agency
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
Certificate	Certificate of Public Convenience and Necessity
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
Chevron	Chevron Corporation
CIPC	California Invasive Plant Council
CM&R Plan	Construction Mitigation and Restoration Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
COE	U.S. Army Corps of Engineers
COE Manual	U.S. Army Corps of Engineers Wetlands Delineation Manual
Commission	Federal Energy Regulatory Commission
CPUC GO 112-E	California Public Utilities Commission, General Order 112-E
CRHR	California Register of Historical Resources
CRWQCB	California Regional Water Quality Control Board, Colorado River Basin Region
CSLC	California State Lands Commission

## ACRONYMS AND ABBREVIATIONS (cont'd)

CSWRCB	California State Water Resources Control Board
CWA	Clean Water Act
dB	decibel
dBA	decibels on the A-weighted scale
DNA	Decade of North American Geology
DOT	U.S. Department of Transportation
draft EIS/EIR	draft environmental impact statement/environmental impact report and draft land use plan amendment
Dthd	dekatherms per day
DTSC	Department of Toxic Substances and Control
DWMA	Desert Wildlife Management Area
ECA	Enigia Costa Azul
Ecological Analysis	<i>An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion</i>
EIA	Energy Information Administration
EI	Environmental Inspector
El Paso	El Paso Natural Gas Company
EPA	U.S. Environmental Protection Agency
EQH	Earthquake History of the United States
ESA	Endangered Species Act of 1973
FR	Federal Register
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FIRM	Federal Flood Insurance Rate Maps
FLPMA	Federal Land Policy and Management Act
FWENC	Foster Wheeler Environmental Corporation
FTHLICC	Flat-tailed Horned Lizard Interagency Coordinating Committee
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
HAPs	Hazardous Air Pollutants
HCA	high consequence area
HDD	horizontal directional drill
HDD Plan	Horizontal Directional Drill Plan
HMA	Herd Management Area
ICAPCD	Imperial County Air Pollution Control District
IID	Imperial Irrigation District
INGAA	Interstate Natural Gas Association of America
ISDRA	Imperial Sand Dunes Recreation Area
ISDRA Plan	ISDRA Management Plan
kV	kilovolt
L <sub>dn</sub>	day-night equivalent sound level
L <sub>eq(24)</sub>	24-hour equivalent sound level
LNG	liquefied natural gas
LRPC	La Rosita Power Complex
LUST	leaking underground storage tank
MACT	Maximum Achievable Control Technology
MAOP	maximum allowable operating pressure
Mar Adentro	Terminal GNL Mar Adentro de Baja California
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities

ACRONYMS AND ABBREVIATIONS (cont'd)

mg/l	milligrams per liter
MMI	Modified Mercalli Intensity
MMP	mitigation monitoring program
MMscfd	million standard cubic feet per day
MOA	Memorandum of Agreement
MP	milepost
MRZ	mineral resources zones
MUCs	multiple-use classes
MUIDs	Map Unit Identifiers
MWD	Metropolitan Water District
NABCI	U.S. North American Bird Conservation Initiative
NAFTA	North American Free Trade Agreement
NAAQS	National Ambient Air Quality Standards
NECO	Northern and Eastern Colorado Desert
NECO Plan	Northern and Eastern Colorado Desert Coordinated Management Plan
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NOAA Fisheries	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NOI/NOP	<i>Notice of Intent/Preparation to Prepare an Environmental Impact Statement/Report and Proposed Land Use Plan Amendment for the Proposed North Baja Pipeline Expansion Project, Request for Comments on Environmental Issues/Impacts, and Notice of Public Scoping Meetings</i>
North Baja	North Baja Pipeline, LLC
Notice of Pre-Filing Process Review	<i>Notice of Pre-Filing Process Review for the North Baja Pipeline Expansion Project</i>
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSAs	noise-sensitive areas
NSR	Nonattainment New Source Review
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
O <sub>3</sub>	ozone
OEP	Office of Energy Projects
OHV	off-highway vehicle
OHV Plan	Off-Highway Vehicle Management Plan
OPS	Office of Pipeline Safety
OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
Pb	lead
PD	Preliminary Determination on Non-Environmental Issues
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIR	potential impact radius
Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
PM <sub>10</sub>	particulate matter having an aerodynamic diameter of 10 microns or less
PM <sub>2.5</sub>	particulate matter having an aerodynamic diameter of 2.5 microns or less

ACRONYMS AND ABBREVIATIONS (cont'd)

ppm	parts per million
ppmw	parts per million by weight
PRMM Plan	Paleontological Resource Mitigation and Monitoring Plan
Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
Project or proposed Project	North Baja Pipeline Expansion Project
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTE	potential to emit
PVID	Palo Verde Irrigation District
RMPs	resource management plans
ROD	Record of Decision
RV	recreational vehicle
SAA	Streambed Alteration Agreement
SCADA	Supervisory Control and Data Acquisition
SCEDC	Southern California Earthquake Data Center
SDG&E	San Diego Gas and Electric
Secretary	Secretary of the Commission
SEDAB	Southeast Desert Air Basin
Sempra	Sempra LNG
SHPO	State Historic Preservation Office
SIL	significant impact level
SIPs	State Implementation Plans
SMA	Special Management Area
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SoCal Gas	Southern California Gas Company
SPCC Plan	Spill Prevention, Containment, and Control Plan for Hazardous Materials and Wastes
SPPE	Small Power Plant Exemption
SR	State Route
STATSGO	State Soil Geographic
SWPPP	Storm Water Pollution Prevention Plan
TDM Plant	Termoelectrica de Mexicali Power Plant
TGN	Transportadora de Gas Natural de Baja California
tpy	tons per year
Transwestern	Transwestern Pipeline Company, LLC
µg/m <sup>3</sup>	micrograms per cubic meter
UCMP	University of California Museum of Paleontology
USC	United States Code
USCIS	U.S. Citizenship and Immigration Services
USGS	U.S. Geological Service
VOC	volatile organic compounds
VRM	Visual Resource Management
WECO	Western Colorado Desert
WECO Plan	Western Colorado Desert Routes of Travel Designations Plan
WGCEP	Working Group on California Earthquake Probabilities
WHA	Wildlife Habitat Area
WHMA	Wildlife Habitat Management Area

ACRONYMS AND ABBREVIATIONS (cont'd)

WHMP	Wildlife Habitat Management Plan
Yuma District Plan	Yuma District Resource Management Plan