PETITION TO CEC LICENSE FOR THE PASTORIA ENERGY FACILITY-REROUTE 2A OF THE GAS PIPELINE 99-AFC-7

Prepared by:

PASTORIA ENERGY FACILITY
39789 Edmonston Pumping Plant Rd.
Lebec, California 93243

CALPINE

For Submittal to:

California Energy Commission
Energy Facilities Siting and Environmental Protection Division
1516 Ninth Street
Sacramento, California 95814

February 13, 2004

February 16, 2004

Ms. Nancy Tronaas
Compliance Project Manager
California Energy Commission
1516 9th Street, MS-2000
Sacramento, CA 95814

Re: **Pastoria Energy Facility – Transmittal of Petition for a Minor Modification to PEF Decision 99-AFC-7 for Pastoria Gas Pipeline Reroute 2A**

Dear Ms. Tronaas:

Please find enclosed a Petition for a minor modification to the gas supply pipeline route under CEC License for the Pastoria Energy Facility (99-AFC-7). URS Corporation has prepared this Petition on behalf of Calpine Corporation. As per your direction, find enclosed 15 copies (1 unbound) as well as a PDF version on CD.

This Petition addresses a proposed 3.0-mile-long reroute (2A) of the previously approved fuel gas pipeline route (identified as "Route 3" in the Application for Certification to the CEC dated November 1999 [as amended June 2001]).

Pipeline Reroute 2A is intended to avoid potential blunt-nosed leopard lizard habitat that was identified during preconstruction surveys in November 2003 along the corresponding portion of the previously proposed and approved gas pipeline route. Biological surveys for pipeline Reroute 2A were conducted in January 2004, including transect surveys (1,000 feet either side of centerline). Based on regulatory agency (CEC, U.S. Fish and Wildlife Service, and California Department of Fish and Game) input at the site meeting on January 29, 2004, the applicant has committed to additional mitigation measures to protect blunt-nosed leopard lizards. These measures are outlined in the February 2, 2004 letter to Ms. Susan Jones at the U.S. Fish and Wildlife Service.

The survey results and the proposed reroute location indicate no listed plant or animal species will be adversely impacted by the reroute. The proposed reroute is not expected to result in any significant long-term effects on the environment or require any modifications to previously adopted CEC Conditions of Certification. Calpine Corporation understands that the CEC can likely process this Petition as a Minor Modification to the Decision, which would allow expedited approval and authorization to proceed. An expedited authorization is key to Calpine's pipeline construction schedule needs and the ongoing progression of construction from north to south along the pipeline route.

Please call Ed Merrihew (619.710.8711) of Calpine Corporation if you have any questions or comments. URS and Calpine appreciate your efforts on this matter.

Sincerely,
URS Corporation

Robert Ray
Senior Project Manager

cc. Stuart Itoga (CEC)
Kathleen Stewart (EPA)
Susan Jones (USFWS)
Shannon Holbrook (USFWS)
Clarence Mayott (CDFG)
Ed Merrihew (Calpine)
Fred Salzmann (Calpine)
Noel Gonzales (Calpine)
Chris Delaney (Calpine)
Barbara McBride (Calpine)

PETITION TO THE CEC LICENSE FOR REROUTE 2A OF THE GAS PIPELINE
PASTORIA ENERGY FACILITY
FEBRUARY 13, 2004

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION 1-1

1.1 OVERVIEW OF PETITION 1-1
1.2 OVERVIEW OF PROJECT CHANGES 1-1
1.3 NECESSITY OF PROPOSED CHANGES 1-2
1.4 SUMMARY OF ENVIRONMENTAL IMPACTS 1-2
1.5 CONSISTENCY OF CHANGES WITH LICENSE 1-2

2.0 DESCRIPTION OF PROJECT CHANGES 2-1

2.1 INTRODUCTION 2-1
2.2 PROPOSED PROJECT CHANGES 2-1

2.2.1 Pastoria Gas Pipeline Reroute 2A 2-1

3.0 ENVIRONMENTAL ANALYSIS OF THE PROPOSED CHANGES 3-1

3.1 INTRODUCTION 3-1
3.2 AIR QUALITY 3-1
3.3 GEOLOGIC HAZARDS AND RESOURCES 3-1

3.3.1 Affected Environment 3-2
3.3.2 Environmental Consequences 3-5
3.3.3 Mitigation Measures 3-6
3.3.4 References 3-6

3.4 AGRICULTURE AND SOILS 3-6

3.4.1 Affected Environment 3-6
3.4.2 Environmental Consequences 3-8
3.4.3 Mitigation Measures 3-9

3.5 WATER RESOURCES 3-9

3.5.1 Affected Environment 3-9

TABLE OF CONTENTS

Section **Page**

3.5.2 Environmental Consequences 3-9
3.5.3 Mitigation Measures 3-10

3.6 BIOLOGICAL RESOURCES 3-10

3.6.1 Affected Environment 3-11
3.6.2 Environmental Consequences 3-14
3.6.3 Mitigation Measures 3-16

3.7 CULTURAL RESOURCES 3-16

3.7.1 Affected Environment 3-19
3.7.2 Environmental Consequences 3-20
3.7.3 Mitigation Measures 3-21
3.7.4 References 3-22

3.8 PALEONTOLOGICAL RESOURCES 3-22

3.8.1 Affected Environment 3-23
3.8.2 Environmental Consequences 3-23
3.8.3 Mitigation Measures 3-24
3.8.4 References 3-24

3.9 LAND USE 3-24
3.10 SOCIOECONOMICS 3-24
3.11 TRAFFIC AND TRANSPORTATION 3-24
3.12 NOISE 3-25
3.13 VISUAL RESOURCES 3-25
3.14 WASTE MANAGEMENT 3-25
3.15 HAZARDOUS MATERIALS HANDLING 3-25
3.16 PUBLIC HEALTH 3-25
3.17 WORKER SAFETY 3-25
3.18 CUMULATIVE IMPACTS 3-26
3.19 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS 3-26

TABLE OF CONTENTS

Section **Page**

4.0 REQUESTED MODIFICATION TO CONDITIONS OF CERTIFICATION 4-1

5.0 POTENTIAL EFFECTS ON THE PUBLIC 5-1

5.1 PROPOSED PROJECT CHANGES 5-1

5.1.1 Pastoria Gas Pipeline Rerotue 2A 5-1

6.0 POTENTIAL EFFECTS ON PROPERTY OWNERS 6-1

6.1 PROPOSED PROJECT CHANGES 6-1

6.1.1 Pastoria Gas Pipeline Reroute 2A 6-1

7.0 LIST OF PROPERTY OWNERS 7-1

List of Tables

Table 1-1 Summary of Project Modifications 1-3
Table 3.4-1 Soil Mapping Units Identified Along Reroute 2A 3-7
Table 3.4-2 Soil Descriptions for Soil Mapping Units Traversed by Reroute 2A 3-8
Table 3.6-1 Wildlife and Plant Species Observed Along Reroute 2A 3-13

List of Figures **Follows Page**

Figure 1a Project Location Map 1-2
Figure 1b Pastoria Gas Pipeline 1-2
Figure 2a Pastoria Gas Pipeline Reroute 2A 1-2
Figure 3.4-1 Soils Identified Along Reroute 2A 3-6
Figure 3.5-1 Drainage Crossings Along Reroute 2A 3-10

1.0 INTRODUCTION

1.1 OVERVIEW OF PETITION

On December 20, 2000, the California Energy Commission (CEC) approved the Pastoria Energy Facility (99-AFC-7). Shortly after the project was approved, Calpine Corporation (Calpine) purchased and now owns the Pastoria Energy Facility, Limited Liability Corporation (PEF, LLC). Calpine is now proposing certain modifications to the project, in order to avoid biological impacts to the federal and state listed blunt-nosed leopard lizard (BNLL), which was encountered during pre-construction biological resource surveys in November 2003 along the approved fuel gas pipeline route. The proposed Pastoria Gas Pipeline Reroute 2A would successfully avoid impacts to this species and its associated habitat.

Calpine is proposing two reroutes (Reroute 2A and 2B [refer to Figures 1a and 1b]) to avoid BNLL habitat and impacts. This Petition focuses on Reroute 2A (refer to Figure 2a). As discussed with the CEC Compliance Project Manager (Ms. Nancy Tronaas) on January 29, 2004, Reroutes 2A and 2B are addressed in separate Petitions. Table 1-1 provides a summary of the changes and the benefits associated with proposed Reroute 2A.

This petition to amend the project contains all of the information required pursuant to Section 1769 (Post Certification Amendments and Changes) of the CEC's Siting Regulations. The specific project changes and information needed to fulfill the requirements of Section 1769 are contained in Sections 1.0 through 7.0. A summary of the proposed modifications is provided in Section 1.2 below.

1.2 OVERVIEW OF PROJECT CHANGES

The proposed changes to the PEF are requested by the PEF, LLC in order to avoid active blunt-nosed leopard lizard habitat along the corresponding portion of the original, approved Pastoria Gas Pipeline route. The proposed changes specific to Reroute 2A are as follows:

Modification of Fuel Gas Supply Line to Address Blunt-Nosed Leopard Lizard – The PEF, LLC is proposing to modify the previously proposed and approved Pastoria Gas Pipeline route between mileposts (MP) 0.6 and 2.5, in order to avoid active and/or potentially active blunt-nosed leopard lizard (BNLL) (*Gambelia sila*) habitat. Segment 2A is approximately 3.0 miles long and runs into the foothills east of the known BNLL habitat (Figure 2a). Proposed Reroute 2A traverses primarily non-native grassland and is located entirely on Tejon Ranch.

Refer to Section 2.0 of this Petition for more specific details of the project changes. Table 1-1 provides a summary of the changes and the benefits associated with each modification.

1.3 NECESSITY OF PROPOSED CHANGES

Section 1769 (a)(B) and (C) of the CEC Siting Regulations requires a discussion of the necessity for the proposed modifications to the PEF project and asks whether the modifications are based on information known to the petitioner during the certification proceeding. The proposed project changes (Reroute 2A) are necessary to avoid potential BNLL habitat that is traversed by the previously proposed and approved route. The petitioner was unaware of the potential BNLL habitat until the regulatory agency required pre-construction surveys were performed in November 2003. The BNLL is listed as endangered at both the federal and state levels.

1.4 SUMMARY OF ENVIRONMENTAL IMPACTS

Section 1769 (a)(E) of the CEC Siting Regulations requires an analysis to address the impacts of proposed modifications on the environment and the proposed measures to mitigate any significant adverse impacts. In addition, Section 1769 (a)(F) of the Siting Regulations requires a discussion of the impact of proposed modifications on the facility's ability to comply with applicable laws, ordinances, regulations, and standards (LORS). Section 3.0 of this Petition includes a discussion of the potential impacts of the proposed changes on the environment. It also includes a discussion of the applicability of existing and proposed mitigation measures, as well as a discussion of the consistency of the proposed modification with LORS.

1.5 CONSISTENCY OF CHANGES WITH LICENSE

Section 1769 (a)(D) of the CEC Siting Regulations requires a discussion of each proposed project modification and asks whether the modification is based on new information that would change or undermine the assumptions, rationale, findings, or other bases of the CEC's final decision on the original AFC. An explanation of why the proposed changes should be permitted is also required.

None of the proposed modifications undermines the assumptions, rationale, findings or other bases of the CEC's final decision on the original AFC. The modifications are expected to avoid active habitat of a federal and state listed endangered species.

The proposed changes are summarized in Table 1-1, below.

TABLE 1-1
SUMMARY OF PROJECT MODIFICATIONS

Modification Description	What Was Licensed	Proposed Modification	Rationale / Necessity
Pastoria Gas Pipeline Reroute 2A (3.0 mi)	Natural Gas Pipeline Route 3 (as approved in the CEC Final Decision, 12/00)	Replace with Reroute 2A at MP 0.60 and re-connect with Route 3 at MP 2.5	Avoid biological impacts to potential BNLL habitat

2.0 DESCRIPTION OF PROJECT CHANGES

2.1 INTRODUCTION

The Pastoria Energy Facility, LLC (PEF, LLC) obtained a license from the California Energy Commission (CEC) to construct and operate the PEF on December 20, 2000. The PEF, as licensed and subsequently amended includes a 31-acre 750 megawatt power plant and onsite sanitary waste treatment facility, a 40-acre laydown/parking area to be used during construction, a 0.85-mile-long access road to provide access to the power plant site from Edmonston Pumping Plant Road, a new 1.38-mile-long 230 kV electrical transmission line, a 0.5-mile-long water supply pipeline and a 12.23-mile long 20-inch diameter fuel gas supply pipeline from the power plant site north to the interstate pipeline owned jointly by the Kern River/Mojave Pipeline.

The power plant is well under construction as is the northern portion of the Pastoria Gas Pipeline. The 230 kV electrical transmission interconnection is already completed.

PEF, LLC proposes Reroute 2A to avoid a portion of the previously approved route (refer to Figure 2a) to prevent disturbance of potentially sensitive biological habitat, as described in Section 1.0. The proposed Reroute 2A will replace 1.9 miles of a portion of the previously approved Pastoria Gas Pipeline route in order to avoid potential biological impacts. Project description changes associated with Reroute 2A are discussed in more detail in Section 2.2.1.

2.2 PROPOSED PROJECT CHANGES

2.2.1 Pastoria Gas Pipeline Reroute 2A

Construction and operation procedures and details for Reroute 2A would be similar to those described for the previously approved route in the Application for Certification (AFC)(99-AFC-7), as amended. A 1.9-mile-long portion of the previously approved route is being replaced by the proposed Reroute 2A. Reroute 2A will increase the length of the overall Pastoria Gas Pipeline by approximately 1.1 miles. In this portion, the previously approved route traverses an area of known habitat for BNLL. The information presented in this CEC License Petition focuses on the aspects of Reroute 2A that are different from the natural gas pipeline related details presented in the AFC, as amended. With the exception of the location and length, the key project details and design elements for Reroute 2A are generally as described in the AFC for the proposed Pastoria Gas Pipeline.

2.2.1.1 Route Description 2A

Proposed Reroute 2A is approximately 3.0 miles long and runs into the foothills to the east and northeast of the power plant site. The topography is highly variable from nearly level flats and small valleys to prominent ridge features. Creek drainages dissect the ridge areas and small ravines and gullies exist on the ridge side slopes. Reroute 2A crosses 12 drainages through predominantly non-native grassland and pastureland. The pipeline construction right-of-way will be used for equipment and material delivery access during construction of the pipeline, in order to avoid potential impacts to BNLL.

2.2.1.2 Construction Procedures

Construction of pipeline Reroute 2A will generally involve the following activities:

- Surveying and staking of centerline
- ROW clearing
- Trenching (including selective topsoil salvage)
- Placement of suitable fill/pad material to protect pipe coating in rocky areas
- Pipe welding and placement in trench
- Pipe inspection
- Backfilling of trench and compaction
- Restoration of disturbed construction areas in accordance with the Revegetation Plan in the revised Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) (URS 2004) and the Construction Storm Water Pollution Prevention Plan (SWPPP) and Erosion Control and Revegetation Plan Supplement (URS 2004).

Pipeline construction will generally follow the procedures described in AFC Section 3.8.3.

Trenching Specifications. The proposed pipeline would be installed primarily by trenching. The trench associated with Pastoria Gas Pipeline Reroute 2A will be excavated and maintained along a staked line, just as originally proposed. The trench will have a minimum width of 36 inches at the bottom and be chamfered (i.e., beveled edge) at the top. The trench depth will typically be approximately 72 to 84 inches allowing for 6 inches of padding in the trench bottom and 4 to 5 feet of cover. No blasting shall be allowed at drainage crossings.

2.2.1.3 Construction Equipment

Construction of the proposed pipeline along Reroute 2A is anticipated to require the use of typical pipeline construction equipment as discussed in the AFC, as amended.

2.2.1.4 Construction Workforce and Schedule

Construction of the proposed pipeline along Reroute 2A is anticipated to require approximately 6 weeks to complete. The workforce will consist of foremen, equipment operators, welders, laborers, truck drivers, technicians, and restoration specialists. In accordance with CEC conditions of compliance, environmental monitors will also be present during ROW clearing, trenching, and restoration activities.

Construction of proposed Reroute 2A is planned to begin in March 2004 and proceed from north to south.

2.2.1.5 Hydrostatic Testing

Prior to operation, the pipeline will be hydrostatically tested to verify its integrity. It is expected that hydrostatic testing will involve use of water obtained from potable water supplies at the power plant site. Following testing, the test water will be collected in facilities at the Pastoria Energy Facility power plant (e.g., tanker truck or Baker tank), and disposed of in an approved manner in accordance with applicable water discharge quality standards. As practical, test water will be reused during the hydrostatic testing procedure in order to minimize the total volume of water required.

2.2.1.6 Operation and Maintenance

The proposed pipeline will supply natural gas to the PEF over the life of the project. The flow of natural gas to the PEF will be controlled and metered at the Mojave/Kern pipeline interconnection point. Additionally, Calpine will meter the gas supply. The pipeline ROW will be periodically inspected. The entire pipeline will be marked with aboveground pole-mounted warning signs every 500 feet. The pipeline will also be periodically inspected via the use of smart pigs (devices that will travel inside the pipeline) between the PEF and the Mojave/Kern pipeline metering station.

2.2.1.7 Abandonment

The proposed pipeline is expected to operate over the life of the project. At the end of its useful life, the pipeline will be abandoned in accordance with applicable regulations in place at that time. It is currently anticipated that the buried pipeline would likely require purging and/or filling with an inert gas prior to capping and abandonment in place.

3.0
ENVIRONMENTAL ANALYSIS OF THE PROPOSED CHANGES

3.1 INTRODUCTION

Sections 1769(a)(E) and (F) of the CEC Siting Regulations require that the following environmental information regarding proposed changes be addressed as part of any post-certification Petition:

- An analysis of the impacts the modifications may have on the environment and proposed measures to mitigate any significant adverse impacts (Section 1769(a)(E), and

- A discussion of the impact of the modifications on the facility's ability to comply with applicable LORS (Section 1769(a)(F).

The analysis is organized by environmental discipline/topic in Sections 3.1 through 3.19. These topicss are the same as analyzed in the original AFC.

In summary, the proposed modifications to the approved Pastoria Gas Pipeline component of the overall PEF project (as previously amended) will result in insignificant impacts to the environment, the public and adjacent property owners, and are expected to result in minimal short-term construction related impacts.

3.2 AIR QUALITY

The proposed project modification (realignment of the fuel gas pipeline to avoid sensitive biological habitat) will not modify operational air emissions from the approved PEF. The proposed re-alignment of the fuel gas line will not result in an appreciable increase in construction equipment emissions. The proposed project modifications do not change the assumptions used to analyze the impacts of the original project, or the CEC Conditions of Certification for the approved project license with respect to air quality.

3.3 GEOLOGIC HAZARDS AND RESOURCES

This section assesses geologic hazards that have the potential to pose hazards to the gas supply pipeline along proposed Reroute 2A, as well as geologic resources that may be affected by Reroute 2A. Potential geologic hazards that are addressed are as described in Section 5.3 of the AFC, and include: surface fault rupture, earthquake ground shaking, liquefaction, mass wasting and slope stability, subsidence, expansive soils, and flooding. The geologic resources present in the project region, including geologic features and mineral

resources, are also as described in Section 5.3 of the AFC. The environmental consequences of developing the pipeline reroute are also discussed, along with mitigation measures. The project's compliance with applicable LORS has already been assessed in Section 7.0 of the AFC. A complete list of geology references is presented in Section 5.3 of the AFC, and is not repeated herein.

A site visit was conducted by URS Geologists on February 4, 2004, at which time the entire Reroute 2A was traversed by foot and evaluated for geologic hazards.

The proposed pipeline will typically be installed in a 72 to 84-inch deep trench with 4 to 5 feet of cover. In areas of bedrock, the pipeline will be trenched and covered with at least 2 feet of native material in areas outside of drainage crossings. At several drainage crossings where bedrock occurs at a shallow depth, the pipeline will be encased and covered by at least 18 inches of concrete where trenched into bedrock for protection from potential scour and erosion.

3.3.1 Affected Environment

3.3.1.1 Topography

Reroute 2A is circuitous, and is approximately 3.0 miles long. The rerouted section exists between MP 0.6 and MP 2.5 of the original route, and winds up into the foothills of the Tejon Hills and Tehachapi Mountains to the southeast of the San Joaquin Valley. Topographic elevations range from 1,000 to 1,500 feet above sea level. The topography is highly variable, with some relatively gently-sloping areas, and other steep and rugged areas of bedrock terrain. Side slopes on ridges and intervening drainages locally exceed 50 degrees. Creek drainages dissect the ridges, and small ravines and gullies exist on side slopes. Twelve mapped drainage crossings are traversed by Reroute 2A (refer to Figure 3.5-1 in Section 3.5 [Water Resources]).

3.3.1.2 Regional Geology and Physiography

The regional geology, general physiographic conditions, and local geology and structure for Reroute 2A are as described in Section 5.3 of the AFC, as amended. The stratigraphy of Reroute 2A consists of Tertiary Vaqueros Formation and Santa Margarita Formation sedimentary rocks, and older basalts and granodiorites. Steep slopes are found locally in areas underlain by basalts and granodiorites. Figure 5.3-6 of the AFC shows the mapped

outcrop pattern of these bedrock formations, as well as local faults along the area traversed by Reroute 2A.

3.3.1.3 Regional Seismotectonic Setting and Seismicity

The regional seismotectonic setting and seismicity for Reroute 2A are as described in Section 5.3 of the AFC. The nearest zoned seismic sources are the Pleito fault, the Garlock fault, the White Wolf fault, and the San Andreas fault.

3.3.1.4 Geologic Hazards

Several of the geologic hazards present on Reroute 2A are different than those present on the original route, which was on relatively flat terrain. The following sections discuss the potential geologic hazards that may occur along Reroute 2A.

Surface Fault Rupture. The proposed pipeline reroute does not cross any faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act. Reroute 2A does cross several old bedrock faults mapped by Hoots (1930), as shown on Figure 5.3-6 of the AFC. These faults are not considered to be active.

The primary pipeline route crosses the Pleito fault at approximately R3 MP 0.25, approximately 0.4 mile west of the beginning of proposed Reroute 2A. The corresponding portion of the previously proposed and approved pipeline route (that is replaced by Reroute 2A) also crossed the Pleito fault. As discussed in Section 5.3.1.1.6 of the AFC, the Pleito fault shows evidence of Holocene activity, and is considered an active fault. The Pleito fault as mapped terminates very close to Reroute 2A at R2A MP 2.5. It is possible that the Pleito fault is buried beneath alluvium at this location. The potential for surface fault rupture at this location is considered moderate (see Table 5.3-4 of the AFC).

Earthquake Ground Shaking. Moderate to severe earthquake ground shaking is a significant seismic hazard that can be expected in the project area. Reroute 2A is thus subject to potentially strong seismic shaking. The same hazard exists for the corresponding portion of the previously proposed and approved pipeline route that is replaced by Reroute 2A.

Liquefaction. Liquefaction is the phenomenon during which loose, saturated, cohesionless soils temporarily lose shear strength during strong ground shaking. Shallow groundwater is required for liquefaction to occur. As discussed in Section 5.3.1.1.6 of the AFC, groundwater

is relatively deep in most of the project area. The probable lack of shallow groundwater conditions along most of Reroute 2A would suggest that the hazard from liquefaction is low. However, shallow groundwater conditions may exist at numerous drainage crossings on Reroute 2A (Figure 3.5-1). Bedrock appears to be close to the ground surface at these locations, and the soils appeared to primarily consist of silts and clays, with little to some sand. The potential for liquefaction is, therefore, considered low to moderate on Reroute 2A.

Mass Wasting and Slope Stability. As previously noted, much of Reroute 2A is located on relatively steep terrain. Much of the route traverses areas underlain by volcanic and sedimentary rocks. Small volcanic rocks and boulders appear to have been transported down slope by rolling and falling, but no evidence for shallow slides, deep-seated mass movement or slope creep was observed. The small volcanic rocks and boulders observed on the ground surface would not pose a hazard to a buried pipeline. The lack of evidence of slope instability on Reroute 2A indicates that the potential hazard from slope instability is low.

Evidence of mass wasting by debris flows was observed at drainage crossings 2A-3 and 2A-10 and (see Figure 3.5-1). Large, rounded to subangular granitic boulders were observed in the streambed and on the streambanks at these two stream crossings. The watersheds for both streams are fairly large, and extend far up into the Tejon Hills/Tehachapi Mountains to the southeast of Reroute 2A. The granite boulders have been transported down slope from areas of granitic bedrock outcrop at higher elevations in the watershed. The age of the debris flows is unknown. The potential hazard posed by mass wasting in the form of debris flows and possible associated scour/erosion in these two drainages is considered moderate to high. This hazard will be mitigated by appropriate pipeline engineering, design, and construction.

Subsidence, Settlement and Expansive or Collapsible Soils. As discussed in Section 5.3 of the AFC, the potential for subsidence, settlement, and expansive or collapsible soils is considered low.

Flooding. Table 5.3-4 in Section 5.3 of the AFC identifies specific areas that may be susceptible to flooding, erosion, and sedimentation. These areas coincide with stream crossings, where deep burial and protection of the pipeline may be required to avoid exposure and scour of the pipeline by erosion.

Based on a review of topographic maps and field reconnaissance, there are 12 drainage crossings on Reroute 2A (Figure 3.5-1). Several of these drainages had flowing water at the

time of the February 4, 2004 site visit. As previously discussed, the potential for mass wasting, scour, erosion and sedimentation as the result of debris flows exists at drainage crossing 2A-3 and 2A-10 (Figure 3.5-1). Thus, the potential for flooding, erosion, and sedimentation at the drainage crossing along Reroute 2A is moderate to high.

3.3.1.5 Geologic Resources

The California Geological Survey (CGS), formerly the California Division of Mines and Geology, classifies the significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975 (SMARA). Mineral Resource Zones are identified by the CGS to describe the significance of mineral deposits, and the State Public Resources Code requires that local governments consider significant mineral resources in the planning process. The following geologic resources are evaluated in the general project area.

Sand and Gravel Aggregate Resources. Sand and gravel aggregate resources are found in abundant quantities in the project area. No other hard rock mineral resources are known to exist in the vicinity of Reroute 2A. Prospecting for expansion of the existing gravel operation did not find commercial quantities of crushable gravel in the proposed site vicinity (Drummond, 1999). The Griffith Company operation reportedly plans to expand operations to the southeast, away from the proposed power plant and Reroute 2A.

Mineral Resources. No economically recoverable mineral resources are known to exist along Reroute 2A.

Oil and Gas Resources. The Tejon Oil Field is approximately 5 miles north of Reroute 2A. Oil is currently being exploited from this field. Proposed gas pipeline Reroute 2A should not have any impact on current or future oil and gas production activities.

3.3.2 Environmental Consequences

The environmental consequences of developing pipeline Reroute 2A are generally as described in Section 5.3 of the AFC. No soil or geologic conditions that would preclude construction of Reroute 2A have been identified. Reroute 2A will not impact aggregate/ mineral resource/oil and gas extraction operations in the area. No significant geologic-related impacts are expected to occur as a result of project implementation utilizing Reroute 2A.

3.3.3 Mitigation Measures

As discussed in Section 5.3.3 of the AFC, the Pastoria Energy Facility and associated linear facilities will be designed in accordance with all applicable Seismic Zone 4 and CBC 1998 requirements. The proposed pipeline design also includes consideration of 49 CFR 192 (Federal Gas Pipeline Code). The pipeline will be designed and constructed to avoid or mitigate the geologic hazards identified herein. Appropriate hazard-specific pipeline design measures will be implemented during construction, which will take place under the direction of a Certified Engineering Geologist. No additional mitigation measures are required.

3.3.4 References

See Section 5.3.6 of the AFC for a complete list of Geologic references utilized for this assessment.

3.4 AGRICULTURE AND SOILS

3.4.1 Affected Environment

Proposed Reroute 2A runs east of the previously proposed and approved fuel gas pipeline route for approximately 0.84 mile then northeast for approximately 1.16 miles and west for approximately 1 mile through sloping pastureland at the base of the Tejon Hills. Twelve drainages are crossed along the 3.0 mile pipeline reroute.

3.4.1.1 Soil Resource

Reroute 2A traverses five soil types as shown on Figure 3.4-1. Table 3.4-1 lists the soil types traversed by pipeline route mileposts. Table 3.4-2 lists the various soil types and their associated characteristics. The majority of Reroute 2A crosses Pleito Chanac Sandy Clay Loam (soil mapping unit 162), which is deep and has a slow permeability and moderate shrink-swell potential. This soil type has a high susceptibility to water erosion. The next most dominant soil type is Cibo Cobbly Clay (soil mapping unit 123), which is more shallow and has a moderately slow permeability and high shrink-swell potential. Cibo Cobbly Clay has a low susceptibility to water erosion. Arvin Sandy Loam (soil mapping unit 110), Tunis-Walong Complex (soil mapping unit 188), and Hesperia Sandy Loam (soil mapping unit 146), are crossed to a much lesser extent along the pipeline reroute. These latter three soil

types demonstrate a moderate to moderately rapid permeability and low shrink swell potential. These soils are moderately susceptible to water erosion.

TABLE 3.4-1
SOIL MAPPING UNITS IDENTIFIED ALONG REROUTE 2A

Project Component	Approximate Mileposts[1]	Map Symbol[1, 2]	Soil Name[3]
Reroute 2A: Pastoria Gas Pipeline			
	MP R2A-0.00-0.08	146	Hesperia Sandy Loam
	MP R2A-0.08-0.15	123	Cibo Cobbly Clay
	MP R2A-0.15 -0.20	146	Hesperia Sandy Loam
	MP R2A-0.20 -0.70	162	Pleito-Chanac Sandy Clay Loams
	MP R2A-0.70 -0.82	110	Arvin Sandy Loam
	MP R2A-0.82 –1.00	188	Tunis-Walong Complex
	MP R2A-1.00 –1.10	123	Cibo Cobbly Clay
	MP R2A-1.10 –1.24	110	Arvin Sandy Loam
	MP R2A-1.24 –1.59	123	Cibo Cobbly Clay
	MP R2A-1.59 –1.75	162	Pleito-Chanac Sandy Clay Loams
	MP R2A-1.75-1.96	123	Cibo Cobbly Clay
	MP R2A-1.96 –2.05 (SW side of ROW)	123	Cibo Cobbly Clay
	MP R2A-1.96 –2.05 (NE side of ROW)	162	Pleito-Chanac Sandy Clay Loams
	MP R2A-2.05 –3.00	162	Pleito-Chanac Sandy Clay Loams

1 Refer to Figure 3.4-1 for mapped locations and milepost locations.
2 Source: Soil Conservation Service. 1981. Soil Survey of Kern County, Southeastern Part.
3 Refer to Table 3.4-2 for soil descriptions and interpretations.

3.4.1.2 Agriculture and Prime Farmland

The entire length of Reroute 2A is used for grazing by cattle on Tejon Ranch.

The Arvin Sandy Loam is designated as potential Prime farmland, and Hesperia Sandy Loam is designated as a soil of potential Statewide Importance by the Natural Resource Conservation Service (formerly the Soil Conservation Service). These soils are present at several locations along Reroute 2A (see Table 3.4-1). Reroute 2A does not traverse any irrigated farmland and the pipeline will be buried.

TABLE 3.4-2
SOIL DESCRIPTIONS FOR SOIL MAPPING UNITS TRAVERSED BY REROUTE 2A

Map Symbol	Map Unit Name and Description	Slope (%)	Depth to Bedrock (inches)	Water Erosion Susceptibility	Wind Erosion Susceptibility	Comments
110	Arvin Sandy Loam	5-9	>60	Moderate	Moderate	Moderately rapid permeability, low shrink-swell potential. CC: IVe-1 (17).
123	Cibo Cobbly Clay	30-75	24-36	Low	-- [2]	Moderately slow permeability, high shrink-swell potential. Capability Subclass: VIIe- (18).
146	Hesperia Sandy Loam	5-9	>60	Low	Moderate	Moderately rapid permeability, low shrink-swell potential, Capability Subclass: IIIe-1 (17) .
162	Pleito-Chanac Sandy Clay Loams	15-30	>60	High	-- [2]	Slow permeability, moderate shrink-swell potential. CC: IVe-1 (18).
188	Tunis-Walong Complex	50-75	10-20	Moderate	-- [2]	Moderate permeability, low shrink-swell potential. CC: IVe-1 (18).

[1] Source: Soil Conservation Service. 1981. Soil Survey of Kern County, southeastern Part.
[2] Dashed lines (--) indicate that no interpretation is available.

3.4.2 Environmental Consequences

3.4.2.1 Soils Resource

Construction of Reroute 2A (63-foot-wide construction ROW on average) is expected to temporarily disturb 22.9 acres of soils and topography. Short-term increases in erosion are expected associated with construction of Reroute 2A. Impacts to the soil resource could be significant if construction activities would occur in areas of high erosion susceptibility and disturbed areas were left exposed and not properly stabilized and/or re-vegetated. With implementation of the CEC Conditions of Certification related to soils (including

implementation of the measures specified in the Construction Storm Water Pollution Prevention Plan [SWPPP] and Erosion Control and Revegetation Plan), no significant impacts to the soils resource are expected.

3.4.3 Mitigation Measures

The CEC Conditions of Certification for Soil and Water, including the requirement (SOILS & WATER-1 and –2) to implement the measures specified in the Construction SWPPP and Erosion Control and Revegetation Plan are adequate to protect the soil resource. No additional mitigation is required.

3.5 WATER RESOURCES

3.5.1 Affected Environment

Proposed Reroute 2A crosses 12 drainages over its 3.0-mile length (refer to Figure 3.5-1). Two of the 12 drainages (drainages 2A-9 and 2A-10) include hydric soils and hydrophytic vegetation which are characteristics indicative of wetlands. The drainages drain toward a large manmade stock pond with no outlet on Tejon Ranch located north of the PEF power plant site and west of Reroute 2A. The pond is used as a water source for cattle as well as for adjacent agricultural operations (pumps are used to transfer water from the pond to agricultural operations). Information on the characteristics of the 12 drainages at the crossing points is presented in Table 3.5-1.

3.5.2 Environmental Consequences

As discussed in Section 5.5.2.3 (Water Resources – Pipelines) of the AFC (99-AFC-7), the proposed fuel gas pipeline route crosses multiple drainages. Construction of proposed Reroute 2A will involve disturbance of approximately 22.9 acres of soils and topography, including 12 drainage crossings. Construction of the buried pipeline will require minimal ROW clearing, as well as trenching, pipeline installation, backfilling, and restoration/ revegetation activities. Pipeline design (i.e., burial depth) includes consideration of scour depths at drainage crossings. Disturbance of the soil surface along the ROW due to limited vegetation clearing and grading, and vehicular/equipment disturbance and compaction during pipeline construction activities is expected to result in short-term increases in soil erosion. Minor increases in erosion and potential sedimentation as a result of pipeline construction will be mitigated by minimizing disturbance and by the implementation of Best Management

Practices (BMPs) during construction. Construction activities will be performed in accordance with the California NPDES General Permit for the Discharge of Storm Water Associated with Construction Activity.

TABLE 3.5-1
DRAINAGE COURSE CROSSINGS FOR
PASTORIA GAS PIPELINE REROUTE 2A[1]

Stream/Drainage	Width of Drainage at Crossing (ft/in)	Depth of Drainage at Crossing (ft/in)
Drainage Crossing 2A-1 – dry swale	5'6"	8"
Drainage Crossing 2A-2 – dry wash	20'	4'
Drainage Crossing 2A-3 – dry swale	5'	2'
Drainage Crossing 2A-4 – dry swale	22'6"	3'6"
Drainage Crossing 2A-5 – dry swale	17'6"	4'6"
Drainage Crossing 2A-6 – dry wash	15'	6'
Drainage Crossing 2A-7 – dry wash	28'	9'
Drainage Crossing 2A-8 – dry swale	12'	1'6"
Drainage Crossing 2A-9 – ephemeral stream	27'	6'
Drainage Crossing 2A-10 – ephemeral stream	35'6"	8 to 10'
Drainage Crossing 2A-11 – dry swale	20'	4'
Drainage Crossing 2A-12 – dry wash	33'	10'

The construction of proposed Reroute 2A is not expected to result in any significant long-term effects on water resources or quality.

3.5.3 Mitigation Measures

Construction of proposed Reroute 2A will be performed in accordance with the Conditions of Certification specified in the CEC Final Decision (December 2000), including Conditions Soils & Water –1 and –2. No additional measures are necessary to protect water resources and quality.

3.6 BIOLOGICAL RESOURCES

The biological resources discussed in this section include vegetated habitats and special-status plant and wildlife species present, or potentially present, within the study corridor

(1,000 feet either side of pipeline centerline) for Reroute 2A. Special-status species include state and federal threatened or endangered species, as well as the regionally rare species. The investigative methods and scope of this study were developed in consultation with the CEC, the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).

3.6.1 Affected Environment

Reroute 2A is a 3.0-mile long pipeline avoidance reroute of the previously approved PEF fuel gas pipeline. The reroute is being proposed due to the potential for blunt-nosed leopard lizard (BNLL) occurrence and habitat along the previously proposed route. Pre-construction surveys prior to construction of the approved pipeline route revealed the presence of several BNLL along the previously approved route. As a result, Reroute 2A was chosen as an alternative in order to avoid potential impacts to this sensitive species which is federal and state listed.

3.6.1.1 Biological Surveys

The "project ROW" is defined as the area that may be directly disturbed during construction of the proposed fuel gas line. The "project survey area" includes the project ROW plus a buffer where both botanical and wildlife resource surveys were conducted. The project buffer includes a 1,000-foot wide zone on each side of proposed construction ROW for Reroute 2A.

Vegetation. Route 2A traverses non-native grassland and actively grazed pastureland. During biological surveys conducted in January 2004, two listed plant species were discovered within 500 feet of either side of the 63-foot-wide construction ROW which the pipeline will be installed within. Piute Mtns. Navarretia (*Navarretia spp.)* was discovered approximately within 100 feet of the proposed construction ROW. Gypsum-loving Larkspur *(Delphinium gypsophilum gypsophilum)* was discovered within 500 feet of the proposed construction ROW.

Wetlands. Reroute 2A crosses 12 drainages as shown on Figure 3.5-1. Drainage crossings 2A-9 and 2A-10 both have wetland indicators consisting of: hydrophytic vegetation, wetland hydrology, and hydric soils. The wetland habitats at drainage crossings 2A-9 and 2A-10 include sufficient seasonal freshwater to support flora dominated by hydrophytes and aquatic plants. These two drainages have marked banks and fairly slow currents. Both drainages have elements of fresh water marsh, including such species as: curly dock (*Rumex crispus*),

rabbitsfoot grass (*Polypogon monspliensis*), watercress (*Rorippa nasturtium-aquaticum*), and speedwell (*Veronica cateneta-aquatica*).

Wildlife. Wildlife resources were evaluated by conducting a comprehensive pre-survey investigation of available literature and subsequent onsite ground surveys in the project survey area, as described below. USFWS and CDFG methodologies were used, where applicable. The entire length of Reroute 2A was surveyed in January 2004, including the 1,000-foot buffers on each side. Surveys were conducted using parallel, 50-foot-wide line transects out to 500 feet. Two meandering transects were walked at 700-foot and 1000-foot distances to complete the required survey area. Transect width and numbers of personnel were adjusted, as appropriate, based on vegetation height and density, and topography. During the line transect surveys, sign (e.g., individuals, dens, burrows, scat, tracks, pellets, skeletal remains of target wildlife (see Table 3.6-1) was recorded and characteristics (e.g., size, age, gender associations) were noted.

The following sensitive species were identified during surveys along Reroute 2A: American Badger (*Taxidea taxus*); San Joaquin Coachwhip (*Masticophis flagellum ruddocki*); Burrowing owl (*Athene cunicularia*); Long-billed Curlew (*Numenius americanus*); Loggerhead Shrike (*Lanius ludovicianus*); Bald Eagle (*Haliaeetus leucocephalus*); Prairie Falcon (*Falco mexicanus*); Northern Harrier (*Circus cyanus*); Ferruginous Hawk (*Buteo regalis*); Golden Eagle (*Aquila chrysaetos*); Sharp-shinned Hawk (*Accipter striatus*); and Cooper's Hawk (*Accipter cooperi*). Table 3.6-1 lists more detailed species observations during surveys performed for Reroute 2A.

Trapping was conducted during January of 2004. Low numbers of rodents were captured along Reroute 2A due to the infrequency of small rodent burrows. Night spotlighting for San Joaquin kit fox and amphibian surveys were also conducted, which determined no suitable habitat for kit fox, red-legged frog, Tehachapi slender salamander or western spade-foot toad.

TABLE 3.6-1
WILDLIFE AND PLANT SPECIES OBSERVED ALONG REROUTE 2A

Species Occurrence Code	Date Species Observed	Observation Description
Vuma-1	10/14/2003	1 Potential den
Atcu-3	10/10/2003	1 Owl present
Atcu-10	10/15/2003	1 Owl observed at burrow w/ white wash
Atcu-32	1/12/2004	1 burrow with two openings that both have white wash
Aqch-1	10/14/2003	1 Individual being mocked by ravens
Aqch-2	10/15/2003	1 Pair
Aqch-9	11/20/2003	2 Adults & 1 Juvenile
Aqch-10	10/19/2003	1 Individual
Aqch-11	1/19/2004	1 Individual
Aqch-12	1/19/2004	1 Individual
Lalu-2	10/14/2003	1 Individual
Cicy-1	10/14/2003	1 Female observed
Cicy-6	1/9/2003	1 Individual observed
Cicy-9	1/19/2004	1 Female
Cicy-10	1/19/2004	1 Individual
Bure-1	10/20/2003	1 Individual observed (Soaring)
Bure-2	1/19/2004	1 Individual soaring
Acco-1	10/14/2003	1 Individual observed
Fame-4	1/9/2003	1 Individual pursuing smaller bird observed
Acst-4	12/15/2003	1 Individual observed
Hale-1	1/19/2004	1 Individual soaring
Nuam-1	1/19/2004	40-50 individuals flying in a flock
Mafl-1	10/10/2003	1 individual observed
Degy-1	1/19/2003	Potential habitat 500' west of ROW
Nav-1	10/10/2003	40-50 plants 400' south of ROW
Nav-2	1/19/2003	Greater than 100 plants 100' south of ROW
Nav-3	1/19/2003	40-50 plants 150' north of ROW

TABLE 3.6-1 (Continued)
WILDLIFE AND PLANT SPECIES OBSERVED ALONG REROUTE 2A

Abbr.	Scientific Name	Common Name
Acco	*Accipter cooperi*	Cooper's Hawk
Acst	*Accipter striatus*	Sharp-shinned Hawk
Aqch	*Aquila chrysaetos*	Golden Eagle
Asfl	*Asio flammeus*	Short-eared Owl
Atcu	Athene cunicularia	Burrowing Owl
Bure	*Buteo regalis*	Ferruginous Hawk
Cicy	*Circus cyanus*	Northern Harrier
Degy	*Delphinium gypsophilum gypsophilum*	Gypsum-loving Larkspur
Fame	*Falco mexicanus*	Prairie Falcon
Gasi	*Gambelia Sila*	Blunt Nosed Leopard Lizard
Hale	*Haliaeetus leucocephalus*	Bald Eagle
Lalu	*Lanuis ludovicianus*	Loggerhead Shrike
Mafl	*Masticophis flagellum ruddocki*	San Joaquin Coachwhip
Nav	*Navarretia spp.*	Piute Mtns. Navarretia
Nuam	*Numenius americanus*	Long-billed Curlew
Tata	*Taxidea taxus*	American Badger
Vuma	*Vulpes macrotis mutica*	San Joaquin Kit Fox

3.6.2 Environmental Consequences

3.6.2.1 Vegetation

Construction of the proposed Reroute 2A would result in temporary disturbance to mostly non-native grassland habitat (22.9 acres). No sensitive plant species were identified in the immediate vicinity of the proposed construction ROW, thus, no adverse effects are expected. The construction ROW would be restored and revegetated following the construction phase, thus no long-term effects on vegetation are expected.

3.6.2.2 Wetlands

Temporary impacts to wetlands will occur at two drainage crossings along Reroute 2A (drainage crossings 2A-9 and 2A-10). The installation of the pipeline along Reroute 2A will

require a 50-foot-wide construction ROW at each drainage crossing. Drainage 2A-9 is approximately 27 feet across from top of bank to top of bank, resulting in temporary impacts of 0.03 acre. Drainage 2A-10 is approximately 35.5 feet across from top of bank to top of bank, resulting in temporary impacts of 0.04 acre. The total temporary impacts at these two wetland crossings totals 0.07 acre. With implementation of the mitigation measures specified in the BRMIMP and the Construction SWPPP and Erosion Control and Revegetation Plan, impacts to these resources will be minimized.

3.6.2.3 Wildlife

Special-status species are known in the areas traversed by proposed Reroute 2A. Potential impacts to these species are described below.

Raptors and other bird species including Long-billed Curlew (*Numenius americanus)*, Loggerhead Shrike (*Lanius ludovicianus)*, Bald Eagle *(Haliaeetus leucocephalus*, Prairie Falcon (*Falco mexicanus)* Northern Harrier *(Circus cyanus)*, Ferruginous Hawk *(Buteo regalis),* Golden Eagle (*Aquila chrysaetos),* Sharp-shinned Hawk *(Accipter striatus) and* Cooper's Hawk (*Accipter cooperi)* are known to occur along Reroute 2A. Impacts to these species are considered less than significant based on the abundance of available habitat in the region and the short-term nature of impacts due to pipeline installation.

Burrowing owls are known to nest and forage in the non-native grassland surrounding Reroute 2A. One active burrow (Atcu-32) was identified along the southern portion of the proposed construction right of way in January 2004. Since the survey was performed on January 12, 2003, the owl(s) have migrated out of the construction ROW for Reroute 2A. Ongoing biological surveys through completion of pipeline construction will be performed to monitor presence and, if found, mitigation measures will be implemented as specified in the BRMIMP.

San Joaquin kit fox are known to forage in the vicinity of Reroute 2A. Mitigation measures in the BRMIMP are considered adequate to preclude significant effects on San Joaquin kit fox.

American badger is known to forage in the vicinity of Reroute 2A. Pipeline installation related impacts would be temporary in nature and would cause this species to relocate

temporarily. This impact would be less than significant based on the abundance of available habitat in the region and the short-term nature of impacts due to pipeline installation.

San Joaquin Coachwhip occurs in the non-native grassland in the vicinity of Reroute 2A. Potential impacts to this species may occur during construction activities; however, impacts are expected to be less than significant based on the abundance of available habitat in the region, mitigation measures and the short-term nature of impacts due to pipeline installation.

In summary, no significant effects on wildlife species are anticipated with construction and operation of Reroute 2A.

3.6.3 Mitigation Measures

Reroute 2A was chosen specifically to avoid potential impacts on sensitive biological species, including BNLL. Implementation of the CEC Conditions of Certification for Biological Resources, including the measures specific to BNLL in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and the revised USFWS Biological Opinion are expected to preclude significant effects on biological resources. The BRMIMP will be revised to address any new measures to be specified by the USFWS in the revised Biological Opinion which is anticipated to be issued in February 2004. As soon as the revised Biological Opinion is issued by the USFWS, the BRMIMP will be revised and resubmitted to the CEC (anticipated submittal date of February 20, 2004).

3.7 CULTURAL RESOURCES

Cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native Americans and other ethnic groups.

The cultural resources analysis which follows reports efforts to determine whether cultural resources exist in areas which could be adversely affected by a proposed project component (Reroute 2A) which was added subsequent to the filing of the AFC. A confidential technical appendix to this AFC Petition is in preparation, which will detail the results of this supplemental survey. The Confidential Technical Report will be submitted under separate cover with an anticipated submittal date to the CEC of February 25, 2004. Although no significant cultural resources were identified within the construction right-of-way (ROW)

during site surveys and testing, measures are proposed to mitigate potential adverse effects of the project to any significant resources should they be encountered.

Laws, ordinances, regulations and standards (LORS) pertinent to the identification, assessment of significance, and assessment of and mitigation of adverse effects to cultural resources are identified in the AFC for the Pastoria Energy Facility (PEF). All cultural resources work for this project was carried out under the direct supervision of archaeologists and historians (as appropriate) who meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (National Park Service, 1983) and is consistent with the procedures for compliance with Section 15064.5 of the California Environmental Quality Act (CEQA) and/or Section 106 of the National Historic Preservation Act (NHPA), set forth in 36 CFR 800.

Supervisory cultural resources personnel who performed work on this project included:

- Brian W. Hatoff: Senior Project Archaeologist, URS Corporation; B.A., M.A. in Anthropology - 28 years experience in cultural resources management and archaeological studies in the western U.S.; designated cultural resource specialist for the PEF.

- Bryon Bass: Senior Archaeologist, URS Corporation; B.A., Ph.D. in Anthropology - 12 years experience in cultural resources management and archaeological studies in the western U.S.; designated alternate cultural resource specialist for the PEF.

Cultural resources work protocols were prepared in consultation with the cultural resources staff of the California Energy Commission (CEC). All work was performed to standards comparable to Bureau of Land Management (BLM) Class 1 (literature review) and Class 3 (complete intensive survey) standards, and in compliance with CEC "Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification" (Draft) (CEC, 1992) and "Rules of Practice and Procedure & Power Plant Site Certification Regulations" (CEC, 2000).

For those portions of the project potentially subject to a U.S. Army Corps of Engineers 404 permit (determination of Corps jurisdiction is pending), the project will be considered a Federal undertaking. The legal framework for addressing cultural resources at the Federal and State level are generally equivalent and are used somewhat interchangeably in the following discussion. Criteria used are those of eligibility for the National Register of

Historic Places (NRHP), identified at 36 CFR 60.4. Consideration was also given to significance with respect to the provisions for those cultural resources considered a historical resource under Section 15064.5 of CEQA, unique archaeological resources CEQA, as described under PRC 21083.2 and the criteria regarding resource eligibility to the California Register of Historic Resources (CRHR). The CRHR criteria essentially mirror the criteria for eligibility to the NRHP, but are somewhat less stringent in the requirement for historic integrity and with respect to resources of local value (Guerra, S., Office of Historic Preservation, personal communication with S. Morgan, 7/9/94).

The cultural resources survey for Reroute 2A was positive resulting in the recordation of two previously unrecorded bedrock mortar complexes and two isolated manos (grinding stone). One bedrock mortar complex (TR 200) will be avoided by re-routing the pipeline (note: Reroute 2A, as proposed in this CEC License Petition, avoids TR 200). A second bedrock mortar site (TR 300) cannot be completely avoided and the area of direct impact has been subjected to an archaeological testing program. The two isolates are located just outside the construction ROW, but in any event isolates are not typically considered significant cultural resources. In conformance with the AFC prepared for the PEF, should such resources be encountered, such resources which have not previously been evaluated under NRHP or CEQA/CRHR criteria, with the exception of isolate artifacts and isolate features which appear to lack integrity or data potential, would be addressed as if they were eligible for the NRHP/CRHR. It is proposed, as an element of project design, that all recorded resources be completely avoided. If those elements of a site that contribute to its significance cannot be avoided, a data recovery program, or other appropriate mitigative effort, will be undertaken in consultation with the CEC.

The testing program at TR 300 undertaken by URS Corporation for the PEF is guided by the protocols set forth in the previously approved test plan prepared by URS Corporation for the PEF (URS, 2000). An archaeological testing plan was prepared for the CEC as part of the AFC process for the PEF. Pursuant to direction from the CEC, the guidance set forth in that document was augmented with specific testing protocols for TR 300 to guide the testing at this location (Torres, 2004).

3.7.1 Affected Environment

The baseline environment for cultural resources is detailed in Section 5.7.1 of the AFC (99-AFC-7). Figures 1b and 2a depict Reroute 2A. The entire route has been surveyed for

cultural resources. The newly proposed natural gas line reroute (Reroute 2A) is for the most part located east of the portion of the original route segment, which it replaces. Route 2A will traverse an upland setting marked by moderate relief and several ephemeral drainages. The construction ROW will be confined to a 63-foot-wide area on average. It can be assumed that this ROW will be graded up to a depth of up to 12 inches. The pipeline will require a maximum 4-foot wide trench excavated to a maximum depth of 7 feet to accommodate the 20-inch diameter pipeline. Within the approximately 3.0 mile long by 200-foot-wide study corridor, no cultural resource sites have been previously recorded.

Reroute 2A was subjected to a pedestrian cultural resources survey on December 22 and 23, 2003 by three archaeologists from URS Corporation. The team was led by Brian Hatoff, the CEC's designated cultural resource specialist for the PEF. Each of the team members meets the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation road. The survey was positive for cultural resources. Temporary site numbers were assigned during the field survey via a basic alphanumeric sequential system, but the final site numbers will be assigned by the Southern San Joaquin Valley Information Center, California State University, Bakersfield. Sites have the designation 'TR' followed by a number, and isolated cultural resource finds have the designation 'ISO' followed by a number.

Site TR 200 is a bedrock milling complex located on a fairly flat zone overlooking an east-west trending ephemeral drainage immediately to the south. The area is currently open grassland, although a large dead oak tree has collapsed over the main complex of boulders. Based on the areal extent and number of surficial manifestations of milling features (approximately six boulders observed with mortars including one that appears to be have non-functional cupules suggesting it is a petroglyph), it appears that this site may be eligible for listing on the CRHR/NRHP and thus, meet CEQA/NHPA criteria for significance. No artifacts were observed on the surface and close inspection of the drainage sidewalls was also negative for buried resources.

Site TR 300 is an extensive bedrock milling complex located between two east-west trending drainages. The area is an open grassland. Upslope (east) of the site the hills become quite steep. The site includes one boulder that exhibits non-functional cupules on a vertical face interpreted to be a petroglyph. Based on the areal extent and number of surficial manifestations of milling features, it appears that this site may be eligible for listing on the CRHR/NRHP and thus, meet CEQA/NHPA criteria for significance. There is potential Corps

involvement with a 404 permit at this location (determination pending). The pipeline centerline was subjected to a systematic archaeological testing program by URS Corporation personnel utilizing shovel test units and backhoe trenching in January and February 2004 in an effort to characterize the subsurface component of the site within the area that would be potentially affected by the pipeline. A Native American monitor was present during the testing program. The testing program yielded a single small obsidian waste flake in one of the shovel test units and one other small obsidian waste flake and chert waste flake were observed on the surface within the proposed construction ROW.

ISO-BH1 and BH2 are isolated fine-grained granitic manos. Both isolates have been recorded.

3.7.2 Environmental Consequences

Under CEQA, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of an historical resource (i.e., a cultural resource eligible to the CRHR, or archaeological resource defined as a unique archaeological resource which does not meet CRHR criteria), or would disturb human remains. A nonunique archaeological or paleontological resource need be given no further consideration, other than the simple recording of its existence by the lead agency.Under the implementing regulations of Section 106 of the National Historic Preservation Act (36 CFR 800), impacts to identified cultural resources need be considered only if the resource is a “Historic Property”; that is, only if it meets the criteria of eligibility for the National Register of Historic Places (36 CFR 60.4).

TR 200: During the archaeological survey URS archaeologists worked with Calpine to re-route the alignment in the vicinity of TR 200 to the east and upslope of the site. As currently configured the pipeline centerline is now approximately 400 feet east of the main boulder complex and 200 feet from the closest bedrock mortar boulder. The new alignment is now located in an upslope area of somewhat steeper gradient that is considered to have low sensitivity for buried cultural resources.

TR 300: The construction ROW through TR 300 avoids all surface features. The pipeline centerline has been subjected to a testing program described above in Section 3.7.1. Based on the extremely low frequency of cultural constituents observed, one waste flake found below

surface and two on the surface within the construction ROW, it appears those components of the site which contribute to its significance would not be affected by the proposed pipeline.

ISO BH1 and BH2: BH1 is located on the edge of the construction ROW and BH2 is located outside the ROW. Typically isolates do not qualify as significant under CEQA or the NRHP.

3.7.3 Mitigation Measures

The same general mitigation measures set forth in Section 5.7.3 of the AFC apply to this CEC License Petition. The project owner shall also comply with the measures set forth in the Cultural Resources Mitigation Implementation and Monitoring Plan (CRMMP) (May, 2001) and the cultural resources Conditions of Certification in the Final Decision for the PEF (2000). These measures address the steps to be taken in the event previously unrecorded cultural resources are encountered during construction. In addition to implementation of those measures the following measures are recommended:

TR 200: it is recommended that an archaeological monitor and Native American monitor be present during all new ground disturbing activity for a distance of 1,000 feet along the pipeline ROW where it passes to the east of the site. The CRMMP will be amended to include this measure.

TR 300: it is recommended that an archaeological monitor and Native American monitor be present during all new ground disturbing activity for a distance of 2,000 feet along the pipeline ROW where it approaches and passes through the northern edge of the site. The CRMMP will be amended to include this measure.

ISO BH1 and BH2: it is recommended that an archaeological monitor and Native American monitor be present during all new ground disturbing activity for a distance of 300 feet along the pipeline ROW where it passes adjacent to the two isolates. The CRMMP will be amended to include this measure.

3.7.4 References

California Energy Commission. 2000. Rules of Practice and Procedure & Power Plant Site Certification. California Energy Commission. Sacramento.

1992. Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification. California Energy Commission, Energy Facilities Siting and Environmental Protection Division.

2000. CEC Final Decision. Application for Certification. Pastoria Energy Facility. California Energy Commission. December.

Guerra, Susan. 1994. State Office of Historical Preservation. Personal communication with S. Morgan (Woodward-Clyde Consultants). July 9, 1994.

Torres, Dorothy. 2004. California Energy Commission. Personal communication with B. Hatoff (URS). January 21, 2004.

URS. 2000. Final Results: Cultural Resources Testing for the Pastoria Energy Facility. Report on file with the California Energy Commission, Sacramento, California.

URS. May, 2001. Pastoria Energy Facility Cultural Resources Mitigation and Monitoring Plan. Report on file with the California Energy Commission, Sacramento, California.

URS. November 1999. Application for Certification for the Pastoria Energy Facility (99-AFC-7). Report on file with the California Energy Commission, Sacramento, California.

3.8 PALEONTOLOGICAL RESOURCES

A paleontological resources survey was performed by Lawler and Associates on December 26, 2003 to determine if paleontological resources exist in areas which could be affected by proposed Reroute 2A. Section 5.8 and Appendix K of the AFC (99-AFC-7) for the PEF describe general background information related to natural setting, geology, specific types of paleontological resources and their known localities within the region.

Supervisory paleontological resources personnel who performed work on this project included:

- David Lawler, Paleontological Resources Specialist (PRS)
- Russell Hasting, Paleontological Resources Monitor (PRM)

Survey methods involved pedestrian surveys within a 75-foot-wide survey corridor along Reroute 2A. The survey was performed using 30-foot-wide transect intervals within the 75-foot-wide survey corridor along the proposed reroute.

3.8.1 Affected Environment

The topography is highly variable along Reroute 2A and consists of nearly level flats and small valleys to prominent ridge features with side slopes exceeding 30 degrees. Creek drainages dissect the ridge areas and small ravines and gullies exist on the ridge side slopes. The closest known vertebrate paleontological resources have been previously discovered from Miocene age continental deposits in the Comanche Creek areas of southeastern Kern County, in the general vicinity of the northern end of the overall gas pipeline ROW. Rock units Quaternary age older alluvium *(Qoa)* and Miocene age continental and volcanic rocks, as previously mapped by U.S. Geological Survey geologists.

The paleontological survey conducted in December 2003 for Reroute 2A yielded no paleontological resources along or adjacent to the proposed pipeline reroute. Although the possibility always exists for buried paleontological resources, for the most part, Reroute 2A traverses a region that appears to have low sensitivity for containing such resources.

3.8.2 Environmental Consequences

Under CEQA Appendix G, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of an historical resource or would disturb human remains. A non-unique archaeological or paleontological resource need be given no further consideration, other than the simple recording of its existence by the lead agency.

Construction of proposed pipeline Reroute 2A is not expected to have any adverse effects on paleontological resources given the paleontological survey results and the low paleontological sensitivity of the region traversed by Reroute 2A.

3.8.3 Mitigation Measures

The same general mitigation measures set forth in Section 5.8.3 of the AFC apply to this Petition. The project owner shall also comply with the measures set forth in the Paleontological Resources Mitigation Implementation and Monitoring Plan (URS, 2001) and the paleontological resources Conditions of Certification in the CEC Final Decision

(December 2000) for the PEF. These measures address the steps to be taken in the event previously unrecorded paleontological resources are encountered during construction.

3.8.4 References

The paleontological references utilized for this assessment are as presented in Section 5.8.5 of the AFC for the PEF.

3.9 LAND USE

The proposed project change does not affect the assessment of land use presented in Section 5.9 of the AFC. Reroute 2A traverses existing non-native grassland and pastureland. Short-term construction related impacts would involve trenching and pipeline installation followed by backfilling and restoration. No adverse land-use related impacts are expected during installation of the pipeline along Reroute 2A. Additionally, no operations phase land use related effects for Reroute 2A are expected.

3.10 SOCIOECONOMICS

As discussed in Section 5.10.2 (Socioeconomics – Environmental Consequences) of the AFC, as amended, construction of the approved route was envisioned to require a workforce of 120 persons for 6 months. Construction of re-routed portion of this route (Reroute 2A) is expected to require a peak workforce of about 70 over an estimated 6-week period. The implementation of Reroute 2A does not affect the insignificant socioeconomic impact findings for the PEF project in Section 5.10 of the AFC, as amended.

3.11 TRAFFIC AND TRANSPORTATION

The proposed project change does not affect the assessment of traffic and transportation presented in Section 5.11 of the AFC. No operation phase traffic related effects for Reroute 2A are expected. Map 5.11-1 has been changed to reflect the addition of the proposed Reroute 2A.

3.12 NOISE

The proposed project change does not affect the assessment of noise related to the PEF presented in Section 5.12 of the AFC. No operation phase noise related effects for Reroute 2A are expected.

3.13 VISUAL RESOURCES

The proposed pipeline alignment is not visible from any public viewing locations. Once the pipeline is installed, the construction ROW will be restored and revegetated. No long-term adverse visual impacts are expected to occur associated with Reroute 2A.

3.14 WASTE MANAGEMENT

The proposed modifications to the project that are addressed in this Petition do not change the impact findings for waste management as presented in Section 5.14 of the AFC. No significant adverse impacts related to waste management are anticipated.

3.15 HAZARDOUS MATERIALS HANDLING

The proposed project modification is not substantial enough to affect the results of the hazardous materials handling assessment presented in Section 5.15 of the AFC. No significant adverse impacts related to hazardous materials use or disposal is expected associated with the proposed pipeline route modification assessed in this Petition.

3.16 PUBLIC HEALTH

The proposed project modification is not expected to impact the public health findings presented in Section 5.16 of the AFC, as amended.

3.17 WORKER SAFETY

The proposed project modification does not affect the worker safety assessment findings presented in Section 5.17 of the AFC.

3.18 CUMULATIVE IMPACTS

The proposed project modification does not affect the cumulative impact assessment presented in Section 5.18 of the AFC. No significant cumulative impacts would occur.

3.19 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Compliance with the applicable laws, ordinances, regulations, and standards (LORS) for the proposed project modifications will be accomplished by complying with the LORS identified in the PEF AFC (Section 7.0) (99-AFC-7) and the CEC's Final Decision (December 2000) for the project.

4.0
REQUESTED MODIFICATION TO CONDITIONS OF CERTIFICATION

No modifications to any CEC Conditions of Certification for the Pastoria Energy Facility project are required in relation to this petition for Reroute 2A.

5.0 POTENTIAL EFFECTS ON THE PUBLIC

Consistent with the California Energy Commission Siting Regulations Section 1769(a)(1)(G), this section includes a discussion of how the proposed reroute of the natural gas pipeline will affect the public.

5.1 PROPOSED PROJECT CHANGES

5.1.1 Pastoria Gas Pipeline Reroute 2A

Proposed Reroute 2A is located on private, undeveloped land on Tejon Ranch. Reroute 2A traverses land that is uninhabited and non-developed. There are no residences anywhere near the proposed alignment of Reroute 2A. No construction or operational impacts on the public are anticipated.

Consistent with the California Energy Commission Siting Regulations Section 1769(a)(1)(I), the following section addresses potential effects on nearby property owners, the public, and parties in the application proceedings.

6.0 POTENTIAL EFFECTS ON PROPERTY OWNERS

6.1 PROPOSED PROJECT CHANGES

6.1.1 Pastoria Gas Pipeline Reroute 2A

Proposed Reroute 2A is on undeveloped private land on Tejon Ranch. No formal development plans (i.e., no active permit applications pending with Kern County) have been identified in the vicinity of the pipeline route. No long-term effects on adjacent property owners related to construction or operation of proposed pipeline Route 2A are expected.

7.0
LIST OF PROPERTY OWNERS

Consistent with the California Energy Commission Siting Regulations Section 1769 (a)(1)(H), this section lists the property owners adjacent to the proposed modifications. Tejon Ranch is the sole landowner identified for Reroute 2A. No additional landowners are located within 500 feet of Reroute 2A.