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May 11, 2009
DPG 09-156

DOCKET
92-AFC-2PC
DATE MAY 11 2009
RECD. MAY 12 2009

Angelique Juarez-Garcia
Compliance Project Manager
California Energy Commission
Siting, Transmission & Environmental Protection Division
1516 Ninth Street
Sacramento, CA 95814

Re: SMUD Cogeneration Pipeline Project – Docket No. 92-AFC-2P
Petition for Post Certification Project Modification
Natural Gas Pipeline Relocation in Yolo County

Dear Ms. Juarez-Garcia:

Enclosed are twelve copies and five CDs of a petition for post certification project modification associated with the SMUD Cogeneration Pipeline Project, Docket No. 92-AFC-2P. SMUD proposes to relocate approximately 150 feet of natural gas pipeline located near the intersection of County Roads 29 and 102 in Yolo County. Project construction is scheduled for August through October 2009.

SMUD believes that the proposed project is beneficial to the public and project owner, does not cause any significant environmental effects, and is compliant with applicable laws, ordinances, regulations, and standards. SMUD does not anticipate that the proposed project will necessitate any changes or deletions to Conditions of Certification already adopted by the Commission for the pipeline project.

Please contact me at (916) 732-6246 with any questions or comments concerning the enclosed petition.

Sincerely,

Stuart Husband

Stuart Husband
Regulatory Compliance Coordinator

Enclosures

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

In the matter of:	)	**Docket No. 92-AFC-2P**
	)	
SMUD Cogeneration Pipeline	)	**SMUD'S PETITION TO AMEND FOR**
Project Licensing Case	)	**POST CERTIFICATION PROJECT**
Compliance	)	**MODIFICATION**
	)	

The Sacramento Municipal Utility District ("SMUD") hereby submits this Petition to Amend for Post Certification Project Modification ("Petition") for the SMUD Cogeneration Pipeline Project ("Project") Licensing Case Compliance pursuant to Section 1769(a), Title 20, California Code of Regulations, to the California Energy Commission ("CEC"). By this Petition, SMUD requests approval to modify the project description specified in the Commission's Decision, to relocate approximately 150 linear feet of pipeline near the intersection of County Roads 29 and 102 in Yolo County.

As an officer of SMUD, I hereby attest, under penalty of perjury, under the laws of the State of California, that the contents of this Petition are truthful and accurate to the best of my knowledge and belief.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

Respectfully submitted,

ARLEN S. ORCHARD, General Counsel
STEVEN M. COHN, Chief Asst. Gen. Counsel
LOURDES JIMENEZ-PRICE, Senior Attorney

Dated: 05/06/09

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Attorneys for the Sacramento Municipal Utility District

Petition for
Post Certification Project Modification

Natural Gas Pipeline Relocation in Yolo County
SMUD Cogeneration Pipeline Project
Docket No. 92-AFC-2P

Prepared for

Sacramento Municipal Utility District

6201 S Street
Sacramento, CA 95616

May 2009

Prepared by

Burleson Consulting, Inc.
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Folsom, CA 95630

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Acronyms and Abbreviation

AFC	Application for Certification
BMP	Best Management Practice
BP	before present
Caltrans	California Department of Transportation
Carson Ice-Gen	Carson Ice Cogeneration Project
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CR	county road
CRHR	California Register of Historical Resources
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
° F	degrees Fahrenheit
FAC	faculative plants
GHG	greenhouse gas
GWP	global warming potential
I-5	Interstate 5
IIPP	Injury & Illness Prevention Program
IMP	Integrity Management Program
lb/day	pounds per day
LDS	Leak Detection System
msl	mean sea level
MW	megawatt
NAHC	Native American Heritage Commission
NCIC	North Central Information Center

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_x	oxides of nitrogen
N_2O	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
Petition	Petition for Staff Approved Project Modification
PG&E	Pacific Gas and Electric
PM_{10}	particulate matter less than 10 microns
PRC	Public Resources Code
PSI	pounds per square inch
RCEM	Roadway Construction Emission Model
ROG	reactive organic gas
ROW	right-of-way
SCADA	Supervisory Control and Data Acquisition
scf	standard cubic feet
SDP	Standard District Policies
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SVP	Society of Vertebrate Paleontologists
SWPPP	Storm Water Pollution Prevention Plan
tpy	tons per year
UCMP	University of California Museum of Paleontology
UPL	obligate upland plants
URBEMIS	Urban Emission Model
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WDR	waste discharge requirements
YSAQMD	Yolo-Solano Air Quality Management District

1.0 INTRODUCTION

Pursuant to Section 1769(a) of the California Energy Commission's (CEC or Commission) Siting Regulations (Title 20, California Code of Regulations (CCR), Section 1769(a)), the Sacramento Municipal Utility District (SMUD) respectfully submits this Petition for Post Certification Project Modification (Petition) to modify the SMUD Cogeneration Pipeline Project description, which was approved by the Commission on May 11, 1994 (CEC Docket No. 92-AFC-2P), by re-locating a section of the gas pipeline in the vicinity of the County Road (CR) 29 and CR 102 intersection, in Yolo County.

1.1 Summary

SMUD proposes to relocate an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) near the intersection of CR 29 and CR 102 in Yolo County to restore the pipeline to its original design standards with respect to pipeline operating pressure. SMUD's construction standards and SMUD's Integrity Management Program (IMP), effective December 17, 2004, specify additional pipeline wall thickness for reinforcement under all road crossings. After Line 700A was installed in 1995, CR 29 was realigned in 1996, thereby crossing Line 700A in an area of unreinforced wall thickness. The current pipeline installation and operation conforms with applicable laws, ordinances, regulations, and standards, including U.S. Department of Transportation (DOT) requirements. However, the pipeline relocation is necessary to restore pipeline operational capability with respect to operating pressure.

1.2 Organization of the Petition

The Petition is based on the requirements of Section 1769(a) of the CEC's Siting Regulation (20 CCR 1769(a)), describing the contents of Post Certification Amendments and Changes. The Petition provides the following:

- A complete description of the modification (Section 1);
- A discussion of the necessity for the modification (Section 1);
- An explanation of why the modification was not known at the time of the certification (Section 1);
- An explanation of why the modification should be permitted (Section 1);
- An analysis of the impact the modification may have on the environment and proposed measures to mitigate any significant adverse impacts (Section 2);
- An analysis of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards (Section 3);
- A discussion of how the modification affects the public (Section 3);
- A list of property owners potentially affected by the modifications (Section 3); and

- A discussion of the potential effect on nearby property owners, the public, and parties in the application proceedings (Section 3).

1.3 Project Background

The SMUD Cogeneration Pipeline was certified by the Commission (Docket No. 92-AFC-2P) on May 11, 1994 (hereafter referred to as the 1994 Commission Decision). The pipeline project was constructed in 1995 and became operational in 1996. The Cogeneration Pipeline serves a total of 924 megawatts (MW) of electrical generation from three cogeneration plants and a combined cycle plant in the Sacramento Area :

- Carson Ice Cogeneration Project (Carson Ice-Gen) located at the Sacramento Regional Wastewater Treatment Plant in south Sacramento;
- Campbell Soup Company Cogeneration Power Project in Sacramento;
- Procter and Gamble Cogeneration Power Project in Sacramento; and
- Cosumnes Power Plant, 500-MW combined cycle power project near Herald, California.

The pipeline originates at the Pacific Gas and Electric Company (PG&E) Gas Lines 400 and 401, north of Winters, in Yolo County and continues east of Interstate (I) - 5 and branches into Lines 700A and 700B. One branch (700A) terminates at the Carson Ice-Gen Project, and the other branch (700B) terminates at the Procter and Gamble Cogeneration Power Project. Another branch (800C) originates at the Carson Ice-Gen Project and terminates at the Cosumnes Power Plant.

The pipeline is approximately 76 miles long (including 26 miles added to the 1994 certification for serving the Cosumnes Power Plant [01-AFC-19C]), but the relocation proposed in this Petition is short (about 150 feet). The proposed work would be located within a relatively undeveloped area allowing impact avoidance measures and mitigation to be incorporated into the design. The pipeline relocation would not substantially differ from the original project evaluated in 1992 to 1994 for any of the other environmental impact concerns. As a result, this Petition is considered the appropriate procedure to authorize this modification.

1.4 Description of Proposed Modification

Line 700A will be relocated from existing pipeline Station 790+00 to approximately Station 791+50. Figure 1 shows the project location and the regional setting for the pipeline. Figure 2 shows the locations of both the existing and the proposed gas pipeline alignments.

1.4.1 Present Route

Line 700A presently crosses under the abandoned portion of CR 29 and continues south until it crosses under CR 29 and then turns approximately 70-degrees to the east.

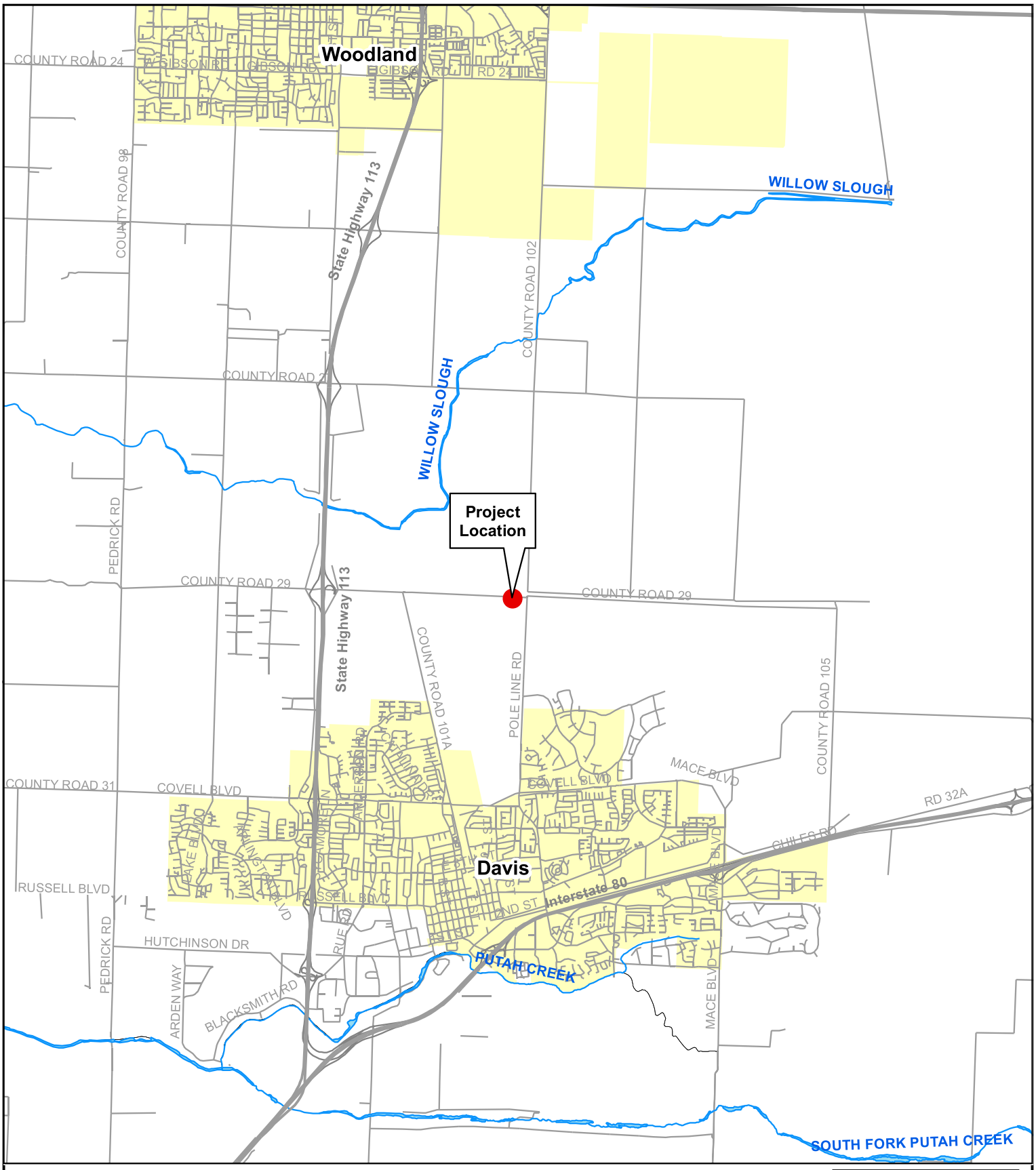

Figure 1
Natural Gas Pipeline Relocation in Yolo County
Project Location

Sacramento Municipal Utility District
Sacramento County, California

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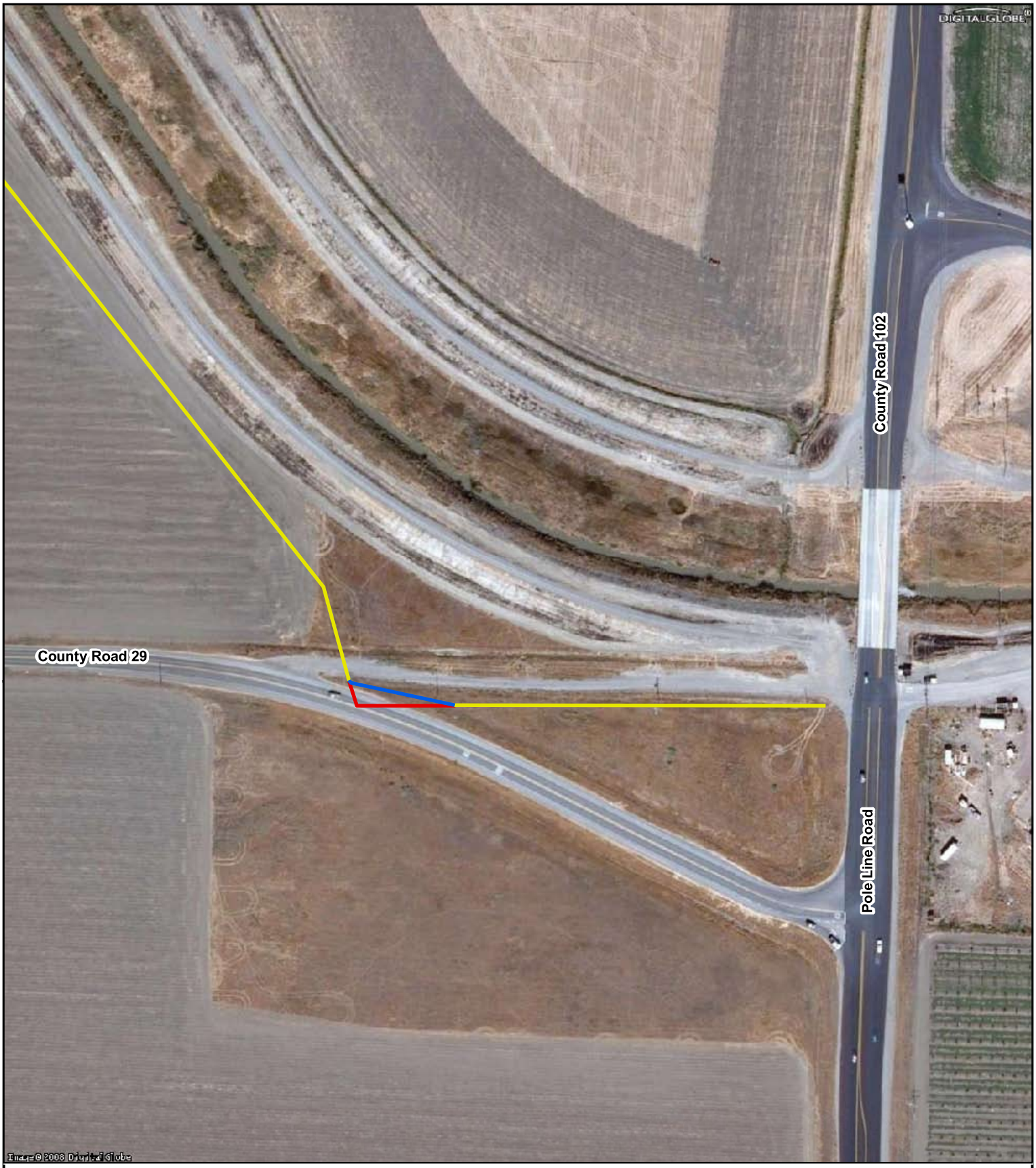


Legend

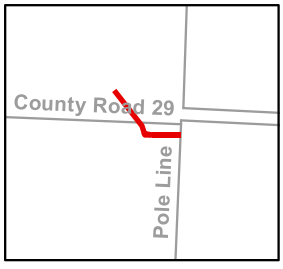
- Existing Pipeline
- Proposed Relocated Pipeline
- Proposed Abandoned Pipeline

Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008

Figure 2
Natural Gas Pipeline Relocation in Yolo County
Proposed Alignment

N

0 130 260 390
Feet



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1.4.2 Horizontal Alignment

The proposed relocation would begin just south of abandoned CR 29, turn southeast and parallel CR 29 for 150 feet, and then connect back into the existing pipeline, thereby avoiding encroachment under CR 29 (See Figure 3).

1.4.3 Construction Area and Corridor

The land crossed by the proposed pipeline relocation is presently unimproved. The construction right-of-way (ROW) would be 85 feet wide. Staging, equipment laydown, and site access would be entirely contained within the ROW. The permanent easement for the pipeline after construction would be 40 feet wide.

If additional area is needed for staging and laydown, an encroachment permit would be obtained from Yolo County Planning and Public Works Division to utilize the abandoned portion of CR 29.

1.4.4 Construction Elements

1.4.4.1 Pipe Specification

The new pipeline would be constructed of 0.5 inch steel, coated with 14 to 28 mils fusion-bonded-epoxy-corrosion-resistant coating with the addition of 28 to 48 mils of abrasion resistant overlay.

1.4.4.2 Construction Procedure

Construction would consist of the following steps:

- Clearing the ROW and stockpiling topsoil;
- Loading and stringing the epoxy pre-coated steel pipe;
- Welding pipe sections and applying corrosion-resistant protective coating at weld joints;
- Excavating the trench;
- Lowering pipe into the trench;
- Connecting to existing pipeline and abandoning old pipe section in place by sealing with slurry;
- Filling trench and compacting; and
- Spreading topsoil and restoring topography.

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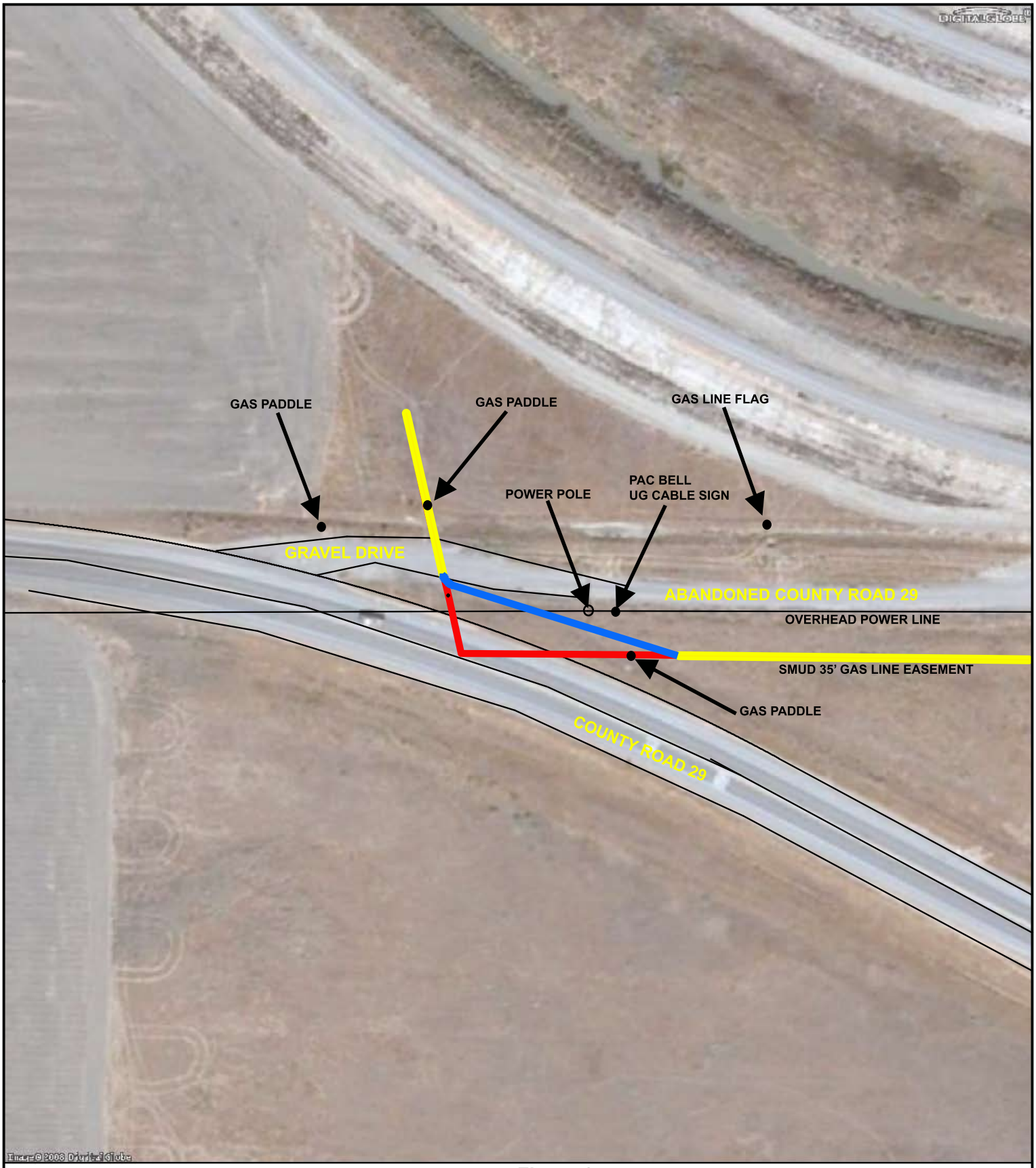


Legend

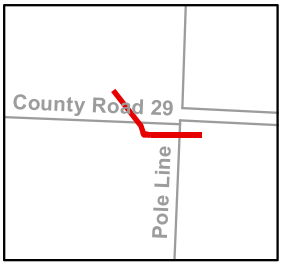
- Existing Pipeline
- Proposed Relocated Pipeline
- Proposed Abandoned Pipeline

Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008

Figure 3
Natural Gas Pipeline Relocation in Yolo County
Project Components

N

0 75 150 225
Feet



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1.4.4.3 Construction Vehicles and Equipment

Equipment to be used to install the pipe is expected to be similar to that listed in Table 1-1.

Table 1-1. Estimated Vehicles and Equipment Needed for Construction

Vehicles and Equipment	Number of Vehicles	Construction Activity
Flatbed truck/Tractor trailer	1 truck	Delivers pipe, large construction equipment, truck-mounted welding units.
Personal transport vehicles	4/day	Transport workers to project construction site.
Side-boom tracked dozer	1	Lift pipe and lower into trench.
Tracked excavator	1	Dig trench for pipe installation, and re-fill with soil.
Rubber-tired backhoe	1	Trenching, spreading excavated soil.
Truck-mounted welding units	4	Weld pipe sections together before installation.
Water truck	1	Water construction site to reduce dust.

1.4.4.4 Drainage Ditch Crossing, Restoration, and Pipeline Abandonment

The new gas pipeline route would include trenching across a roadside drainage ditch south of the abandoned CR 29, and within undeveloped land, as described in the following paragraphs:

Drainage Ditch. There is a roadside drainage ditch south of and adjacent to the abandoned portion of CR 29. The ditch catches surface water runoff from adjacent uplands and roads during winter storm events. Flow in the ditch is intermittent and does not support any federally protected species (see Section 2.7.5). Based on U.S. Environmental Protection Agency (EPA) guidance, ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not waters of the U.S. (Grumbles and Woodley, 2007). Therefore, it is determined that this feature does not currently qualify as waters of the U.S. (see Section 2.7.5) and would not require a Nationwide Permit from the U.S. Army Corps of Engineers (USACE).

Trench Filling and ROW Restoration. After construction, the trench would be backfilled with soil and compacted to match the preconstruction contours. Topsoil stockpiled along the ROW would be spread back over the ROW for passive restoration of the vegetation. Based on preliminary designs, there will be no aboveground pipeline features. Gas pipeline markers consisting of paddle signs would be installed where the pipeline crosses under surface features.

Pipeline Abandonment. Once the relocated pipeline segment is installed, the obsolete pipeline segment would be abandoned in compliance with U.S. Department of Transportation (DOT) and SMUD standards. Abandonment generally consists of purging the abandoned pipeline portion with air or nitrogen, filling it with slurry, and capping both ends in place.

1.4.5 Construction Schedule

Project construction is expected to take approximately two weeks sometime during August through October 2009. Tie-in of the new pipe to the existing pipeline is expected sometime in October 2009. Although the construction activity is brief, the timing constraints are significant. It will be necessary to remove the active pipeline from service during connection to the new pipe. Because Line 700A supports approximately 924 MW of the electrical load in the Sacramento Region, timing is critical. SMUD has determined that the October electrical load is lowest and, therefore, supportable from external sources, after summer cooling demands and before the winter increase in the electrical load.

Also, there is some risk of delays involved with any underground construction should, for example, unidentified infrastructure or cultural features be discovered during construction.

1.5 Necessity of the Modification

This pipeline modification is necessary because Yolo County realigned CR 29. The existing pipeline at this location does not conform to SMUD's design standard and IMP criteria for pipe beneath a roadway. Although the pipeline installation at this location still conforms with applicable DOT requirements, the existing installation restricts SMUD's future operations with respect to pipeline operating pressure.

1.6 Modification Was Not Known at the Time of the Certification

The proposed project modification was not known and could not have been known at the time of the Application for Certification (AFC) in 1994. The realignment of CR 29 occurred in 1996 after the laying of Pipeline 700A in 1995.

1.7 Why the Modification Should be Permitted

The proposed project modification restores the operational capability of the pipeline to the original design standards with respect to operating pressure and meets SMUD's IMP criteria for preventive and mitigation measures.

2.0 POTENTIAL ENVIRONMENTAL IMPACTS

The 1994 Commission Decision contained Conditions of Certification to ensure protection of environmental quality and assure reasonably safe and reliable operation of the pipeline facility. This section presents an analysis of the impact of the modification on the environment, previously proposed measures to mitigate any significant adverse impacts, and how those measures will be employed to mitigate, as applicable, the impact of the modification.

2.1 Air Quality

As summarized in the 1994 Commission Decision, construction emissions associated with the project would be generated by three types of sources: vehicle and construction equipment exhaust emissions, pipeline purging, and fugitive dust from construction activities. The 1994 Commission Decision noted that these construction-related emissions would be temporary and that implementation of Conditions of Certification would mitigate the air quality impacts to insignificant levels. The Conditions of Certification addressed specific mitigation measures to reduce fugitive dust emissions. The 1994 Commission Decision (for Lines 700A and 700B) concluded that the original 50-mile pipeline construction project would not result in significant impacts to ambient air quality.

The 1994 Conditions of Certification are paraphrased as follows:

- **AQ-1:** Project owner shall implement the following mitigation measures along the pipeline route and storage and staging areas during construction: (a) water areas of disturbed soil twice daily; (b) prohibit vehicles, except for emergencies and construction activities, from driving on unpaved roads and in undisturbed areas; (c) spray dirt off truck tires when conditions are muddy prior to entering public roadways; (d) use dust suppressant on spoil areas when active construction is ceased for 15 days; and (e) set speed limits for construction vehicles in the construction easement at 5 miles per hour in urban areas.

The proposed pipeline relocation is located in Yolo County, which is currently designated as non-attainment for the federal 8-hour ozone and non-attainment for the State ozone and particulate matter less than 10 microns in diameter (PM_{10}) standards. Yolo County is designated as unclassified or attainment for all other pollutant-averaging time standards.

2.1.1 Construction Emissions

Since the 1994 Commission Decision and pipeline construction, the Yolo-Solano Air Quality Management District (YSAQMD) has published several guidebooks for evaluating and assessing environmental impacts from projects. The current guidebook, "Handbook for Assessing and Mitigating Air Quality Impacts" (YSAQMD, 2007), dated July, 2007, provides lead agencies, consultants, and project applicants with procedures for addressing air quality impacts in environmental documents. The primary purpose of the handbook is to provide a means to identify proposed development projects that may have a significant adverse effect

on air quality. The document also provides mitigation measures that parties can use to reduce the air quality impacts of projects.

YSAQMD has adopted thresholds of significance of 10 tons per year (tpy) of oxides of nitrogen (NO_x) emissions, 10 tpy of reactive organic gases (ROG), and 80 pounds per day (lb/day) of PM_{10}. These thresholds apply to both construction and operation phases of a project. Both NO_x and ROG are precursors to the formation of ozone. YSAQMD has not established any quantitative thresholds of significance for greenhouse gas (GHG) emissions, which consist primarily of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

Normally, the Urban Emission (URBEMIS) model is used to estimate project emissions; however, URBEMIS has been judged to have some shortcomings when used for new road construction, road widening, pipeline construction, and bridge and overpass construction projects (Sacramento Metropolitan Air Quality Management District [SMAQMD], 2004, page 3-3). Therefore, the Roadway Construction Emissions Model (RCEM), commissioned by the air districts of the Sacramento Region, is recommended by YSAQMD for estimating emissions from these types of projects (YSAQMD, 2007). RCEM is an Excel-based model and is available for download from the SMAQMD website (SMAQMD, 2009). The RCEM model was used to estimate air emissions from load hauling, worker commute trips, construction site fugitive PM_{10} dust, and off-road construction vehicles. The equipment and operating parameters anticipated for the project are presented in Table 2-1.

Table 2-1. Construction Equipment and Operating Parameters

Equipment or Source	Operative Parameter	Number of Days of Operation[1]	Project Function
Area of disturbed soil	0.5 acre	8	ROW for staging and lay-down.
1 Flatbed truck/Tractor trailer	2 round-trips/day (30 miles round trip)	2	Delivers pipe, large construction equipment, truck-mounted welding units.
4 Personal transport vehicles	40 miles round trip	8	Transport workers to project construction site.
1 Side-boom tracked dozer	8 hr/day	1	Lift pipe and lower into trench.
1 Tracked excavator	8 hr/day	3	Dig trench for pipe installation, and re-fill with soil.
1 Rubber-tired backhoe	8 hr/day	3	Trenching, spreading excavated soil.
4 Truck-mounted welding units	8 hr/day	3	Weld pipe sections together before installation.
1 Water truck	3 miles/day	8	Water construction site to reduce dust.

[1] Estimate of actual days of operation (SMUD, 2009a). For conservatism in the emissions estimate, a one-half month time duration was assumed with all equipment operating simultaneously.

To compare the project construction emissions to the YSAQMD significance thresholds, it is necessary to analyze activities for (1) a "reasonable maximum" day to predict maximum daily PM_{10} emissions and (2) the entire duration of the project to predict the total quantity of

NO_x and ROG emitted, which would also be equivalent to the tons per year quantity, since the project construction would take less than one year.

Even though most equipment would operate for only a few days, conservative emission estimates were assumed using a one-half month time duration for all activities, with equipment operating simultaneously during a single construction phase, termed "Grading/Excavation" in the RCEM model. Choosing this phase also addressed heavy duty on-road truck traffic associated with delivering new pipe to the site, by using soil hauling truck traffic as a surrogate for delivery truck traffic. This was necessary because the RCEM model does not allow for independent entry of delivery truck traffic.

The model output results, based upon the above inputs and assumptions, are presented in Table 2-2. A copy of the Roadway Construction Emissions Model input and results are provided in Appendix A.

Table 2-2. Predicted Construction Emissions

	NO_x	ROG	PM_{10}
Project Construction Emissions[1]	0.1 tpy	0.0 tpy	6.1 lb/day
YSAQMD Significance Threshold	10 tpy	10 tpy	80 lb/day
Significant?	No	No	No

[1] The RCEM model rounds the values to the nearest 0.1 tpy

These predicted emission rates are below YSAQMD significance threshold; therefore, additional mitigation measures are not necessary.

2.1.2 Greenhouse Gas Emissions

GHG emissions would occur from two separate and distinct sources: (1) combustion of diesel fuel by construction equipment and vehicles; and (2) purging natural gas from the relocated portion of pipe. Based on the sum of the two sources of GHG emissions, a net total of 1,500.4 metric tons of CO_2-equivalent (CO_2e) would be emitted, as follows:

(1) **Combustion of Diesel Fuel -** GHGs, in the form of CO_2, are estimated at 10.4 tons (9.43 metric tons of CO_2) for the operation of project construction equipment (see Appendix A). However, this is an over-estimate, because a conservative one-half month time duration was assumed in modeling the emissions.

(2) **Purging Natural Gas -** GHGs, in the form of CH_4 (and converted to CO_2e) are estimated based on the quantity of pipeline gas (which is virtually entirely CH_4) that must be purged to allow for cutting and relocating the section of pipe. An isolatable section of pipeline must be shut down and the gas purged to meet strict safety requirements. This is accomplished by releasing the pipeline gas through a valve. Once ambient pressure is reached in the line, ambient air would be injected at one end of the line to purge the remaining gas.

The length of the isolatable 20-inch pipeline that contains the proposed realignment is 9.7 miles. Prior to shutting down the line, the gas is at a pressure of 600 pounds per square inch (psi). As calculated by SMUD engineers, the quantity of CH_4 that would be released is equivalent to 4.267 million standard cubic feet (scf) or a mass of approximately 90 tons of CH_4 (SMUD, 2009b). If all the gas in the isolated pipeline section is released to the atmosphere, this would equal 90 tons of CH_4, or the equivalent of 1,716 metric tons of CO_2e. Since CH_4 has a higher global warming potential (GWP) of approximately 21 times CO_2 (CARB, 2007), this is equivalent to 1,890 tons of CO_2e, or 1,716 metric tons of CO_2e.

However, because the natural gas is normally combusted in the downstream boilers and combustion turbines, and would regularly emit 225 metric tons CO_2e from combustion, the actual net increase of GHG emissions for purging the line would be less at 1,491 metric tons of CO_2e (the GHG emissions from purging the natural gas minus the normal GHG emissions from combustion of the natural gas) (see Appendix A).

While there are no quantitative YSAQMD significance thresholds for GHG emissions; SMUD is in the process of evaluating the technical and economic feasibility of voluntarily mitigating GHG emissions through various alternative approaches, such as reducing line pressure prior to release (thus reducing the overall quantity of gas released), or using nitrogen gas injected at one end to drive the remaining pipeline gas for use by the existing combustion sources at the other end of the pipeline, rather than releasing the gas to the atmosphere.

2.1.3 Air Quality Conclusions

The proposed pipeline relocation is approximately 150 feet long as compared to the original pipeline length of 50 miles; therefore, the emissions and impacts associated with the proposed relocation would be insignificant when compared to the original project. The predicted emission rates are below YSAQMD significance threshold; therefore, additional mitigation measures are not necessary. In addition to complying with current laws and regulations, the existing Conditions of Certification are adequate to protect the environment with respect to air quality.

2.2 Public Health

The 1994 Commission Decision described that the most significant potential source of public exposure to health hazards would result from the accidental release into the atmosphere of natural gas carried by the pipeline. Testimony included in the 1994 Commission Decision described that there would be no substances emitted from the pipeline during normal operation but that a breach could lead to a release of natural gas. The primary component of natural gas is methane, a potential asphyxiant in high concentrations that could cause fire and explosion. SMUD receives odorized gas prior to it entering the system to warn against leaks or releases. SMUD has committed to design, construct, and operate the pipeline to meet or exceed all applicable safety requirements.

A risk analysis for two of the cogeneration plant projects showed that the maximum and acute chronic non-cancer health effects for non-criteria pollutants were less than one-one hundredth of the level required to produce any adverse health effects in humans. The maximum cancer risk was one-twentieth of the significance levels (one-in-a-million cancer cases in a lifetime). Therefore, based on this risk analysis, the Commission staff stated that the cumulative risks would be insignificant, and they expected no significant health impacts from public exposure to criteria pollutants from the entire proposed pipeline project.

Another hazard reviewed in the 1994 Commission Decision was the potential for shock hazards that might arise from voltages induced on the gas pipeline by parallel electric transmission lines. SMUD would adhere to good construction practices that would preclude any hazardous shock impacts.

The material that will be carried in the realigned pipeline is the same as that described in 1994, and is subject to the same potential risks. The Conditions of Certification are those pertaining to public health in the Air Quality (Section 2.1) and Hazardous Materials Management (Section 2.13) sections, and are adequate to prevent significant adverse impacts to public health resources for construction and operation of this modification to the pipeline.

2.3 Waste Generation

Construction of the pipeline would produce relatively small amounts of waste consisting of waste steel from cut-off pipe segments, waste weld rod, small containers of pipeline coating, waste lubricants, small amounts of wood blocking, packing material and typical domestic trash, and sanitary waste.

Conditions to reduce risks and environmental impacts associated with waste, and applicable to Yolo County, specified under the 1994 Commission Decision include:

- **WASTE-1:** The project owner will obtain a hazardous waste generator identification number from the California Department of Toxic Substances Control prior to the start of construction.
- **WASTE-2:** Non-hazardous construction and operation waste that cannot be recycled shall be disposed at facilities approved by the Central Valley Regional Water Quality Control Board and the California Integrated Waste Management Board through its appropriate county local enforcement agency. Hazardous wastes generated from the SMUD Cogeneration Pipeline project shall be managed at an authorized hazardous waste management facility.
- **WASTE-3:** The project owner shall arrange for hazardous waste transportation only through companies duly registered as Hazardous Waste Transporters by the Department of Toxic Substances Control.
- **WASTE-4:** The project owner shall prepare waste minimization and management procedures to be followed by the contractor for all project related wastes including but not limited to oily waste, spent solvent, used filters, paper, wood, steel, plastic,

glass, aluminum, soil, and drilling mud. Such procedures shall be incorporated into the construction contract.

Small amounts of hazardous waste generated during construction, such as solvents and paint, would be managed in accordance with federal, state, and local regulations. Most of the solid waste produced has value as recycled scrap and, therefore, with the exception of domestic trash and sanitary waste, most of the materials will be sold for recycling as scrap. Domestic trash will be collected and removed from the site by a local contractor, and will not have a significant impact on local landfills. Sanitary waste (porta-potties) will be rented from and served by local vendors.

The quantities of waste generated by construction of this modification would be small and for a limited duration, and implementation of the existing Conditions of Certification would be adequate to prevent adverse impacts from waste-generation activities.

2.4 Noise

The original 1994 Commission Decision noted that there would be some intrusive noise impacts during project construction but that these would be temporary and limited to 6 a.m. to 8 p.m. on weekdays and 7 a.m. to 6 p.m. on weekends. It further determined that the operation would not result in significant impacts and that Conditions of Certification adopted as part of the project would reduce project-related noise to the maximum extent possible. Conditions were applied that required notification of potentially affected parties, establishment of a noise complaint phone number and procedure, and a preconstruction noise survey to identify equipment that could produce elevated noise, paraphrased as follows:

- **NOISE-1:** Ten days prior to the initial start of the pipeline construction and for a period of 10 days after the start of the construction, the project owner shall publish and maintain a telephone number in local newspaper(s) for the public to report any undesirable construction noise.
- **NOISE-2:** The project owner shall document, investigate, and attempt to resolve all project related noise complaints.
- **NOISE-3:** The project owner shall restrict construction activities to the period between 6:00 a.m. to 8:00 p.m. on weekdays and 7 a.m. to 6:00 p.m. on weekends.
- **NOISE-4:** The project owner shall conduct an occupational noise survey to identify construction equipment which emits high noise levels, and identify proposed mitigation measures to comply with California and OSHA regulations.
- **NOISE-5:** The project owner shall notify all occupants of buildings within one-half mile radius of the blowdown line at least 2 hours prior to the start of any blowdown operations.

Based on the short temporary duration of the construction and its rural location, implementation of the existing Conditions of Certification would be adequate to prevent adverse impacts from construction-related noise for this modification.

2.5 Water Resources

Impacts to water resources described in the 1994 Commission Decision focused on the temporary effects to water resources during construction and the potential for spilled materials and other wastes from the construction site escaping the immediate site area or reaching the waters of the U.S. and waters of the State of California. Water uses for construction include dust suppression and hydrostatic testing of the pipeline. SMUD would utilize water trucks for dust suppression and purchase water from agricultural operators or existing water service providers for hydrostatic testing.

Conditions to protect water specified under the 1994 Commission Decision include:

- **WATER-1:** The project owner will submit an approved Spill Prevention Control and Counter-Measure Plan.
- **WATER-2:** The project owner will acquire a NPDES permit for discharge of hydrostatic test water (if required).
- **WATER-3:** The project owner will, if necessary, obtain waste discharge requirements (WDRs) for water discharged.
- **WATER-4:** The project owner will prepare a set of as-built plans.

Construction of the relocated pipeline is planned for the August through October, 2009 timeframe. This corresponds to the dry season, when water quality impacts are unlikely to occur. Once completed and surface soil is stabilized, the buried pipeline would cause no continued source of water quality degradation.

Therefore, in addition to complying with current laws and regulations, the existing Conditions of Certification are adequate to protect the water resources from adverse impacts for this modification.

2.6 Soil Resources

Impacts to soil resources described in the 1994 Commission Decision focused on whether the proposed project will cause wind- or water-induced erosion, whether its construction converts or impedes agricultural land uses, and whether the project conforms with applicable laws, ordinances, regulations and standards. In addition, it was noted that slurry management associated with drilling is managed under water quality protection.

Mitigation measures to reduce soil erosion during construction included preparation and compliance with an Erosion Control Plan that includes revegetation, obtaining a General Construction Stormwater Permit (not applicable for less than 1 acre of disturbance), and burial of the pipeline by a minimum of 3 feet of soil in agricultural areas. Once completed, the buried pipeline would impose no limitations on soil uses. Permanent soil erosion control would include restoration of surface soils and revegetation after construction is completed.

Conditions to protect soil specified under the 1994 Commission Decision relevant to this modification and location are paraphrased as follows:

- **SOIL-1:** Prior to the initiation of any earthmoving activities, the project owner shall submit an Erosion Control Plan.
- **SOIL-2**: The project owner shall implement and monitor the measures in the Erosion Control Plan.
- **SOIL-3:** The project owner shall notify the CEC two weeks in advance before the start of rough site grading and grubbing, start of revegetation efforts, completion of construction activities, and when implementation of erosion control measures is completed.
- **SOIL-5:** The pipeline will be buried with a minimum earth cover of three feet in agricultural areas.

The conditions imposed in the 1994 Commission Decision are adequate to prevent significant adverse impacts to soil resources. For this modification it is SMUD's intent to grade the site and allow passive restoration of natural vegetation. The Erosion Control Plan pursuant to SOIL-1 and SOIL-2 will outline the passive restoration process and provide adequate assurance that soil and water resources will be protected.

2.7 Biological Resources

The potential biological impacts of relocating the gas pipeline were analyzed by reviewing existing documents and performing new surveys for confirmation: the existing 1994 Commission Decision (CEC, 1994); the 1993 SMUD Cogeneration Pipeline Project Biological Resource Mitigation and Monitoring Plan (SMUD, 1993); and various supporting documents to the Gas Pipeline project. Finally, supplemental field surveys were performed over the proposed project area to confirm the location and extent of sensitive biological resources and nesting raptors. Trees and potential nest sites out to 0.5 mile from construction were surveyed for Swainson's hawk activity. The resulting analysis prepared by Burleson (Appendix B) indicates that the existing conditions for the pipeline are adequate to protect biological resources during project construction and operation.

2.7.1 Summary of the Commission Decision

The 1994 Commission Decision analyzed the proposed facility to determine whether it could be constructed and operated in a manner that protects biological resources, and whether the project would have a significant impact on these resources. The decision described surveys and research by Woodward-Clyde Consultants, over a 1,000-foot wide survey corridor. The environment was described as largely converted to agriculture and urbanization with the development of irrigation and flood-control structures along streams and rivers. Development has reduced natural habitats to pockets of soils, freshwater marsh, riparian woodlands, and vernal pools.

The decision identified temporary surface activities associated with construction, and potential disturbances of fairy shrimp, dwarf downingia, alkali milkvetch, valley oak tree, Swainson's hawk and burrowing owl, giant garter snake, and valley elderberry longhorn beetle.

Based on the evidence, the Commission made findings that (1) construction poses a slight risk of potential impacts to several state-listed and one federal-listed species; (2) the proposed mitigation measures would likely ensure adequate supervision and adequate program to increase employee awareness of sensitive biological resources; (3) construction and operation are not likely to have significant negative impact on biological resources; and (4) the project is likely to comply with all laws and regulations.

Four Conditions of Certification were applied to the project, paraphrased as follows:

- **BIO-1:** CEC will approve a designated biologist for the project.
- **BIO-2:** The project owner will develop and implement an Employee Environmental Awareness Program.
- **BIO-3:** The project owner will implement the approved Biological Resources Mitigation and Monitoring Plan for this project.
- **BIO-4:** If required by the California Department of Fish and Game (CDFG), the owner will enter into an Endangered Species Memorandum of Understanding per Section 2081 of the California Endangered Species Act.

2.7.2 Environmental Setting

The study area is located in the Sacramento Valley, between Davis and Woodland. The topography of this region is nearly level with an elevation of about 36 feet above mean sea level (msl). The climate is characterized as Mediterranean with cool, wet winters and hot, dry summers. Precipitation is on average 17.5 inches annually, most of which occurs as rain between November 1 and April 30 (Western Regional Climate Center, 2009). Air temperature ranges between an average January low of 37 degrees Fahrenheit (^{o}F) and an average July high of 94^{o} F. The year round average high is about 75^{o} F and the year-round average annual low is 46^{o} F. The Soil Survey of Yolo County, California (U.S. Department of Agriculture [USDA], 2009) identifies and describes Pescadero silty clay, saline alkali soil within the project area. The Pescadero series consists of poorly drained silty clays in basins.

The study area is generally located west of CR 102 and north of the CR 29. The proposed gas pipeline relocation would traverse through an abandoned portion of CR 29, ruderal nonnative grassland, and a roadside ditch.

2.7.3 Analysis Methodology

Prior to conducting the field assessment, the following information sources were reviewed:

- Davis, California United States Geological Survey (USGS) quadrangle.

- California CDFG California Natural Diversity Data Base (CNDDB) records for the Davis, California USGS quadrangle and the surrounding eight quadrangles (Clarksburg, Dixon, Grays Bend, Merritt, Sacramento West, Saxon, Taylor Monument, and Woodland) (see Appendix B).
- U.S. Fish and Wildlife Service (USFWS) list of endangered and threatened species that may occur in or be affected by projects in the Davis, California USGS quadrangle (see Appendix B).
- California Native Plant Society (CNPS) list of Rare and Endangered Plants records for Davis, California USGS quadrangle (see Appendix B).

Field assessments of the study area were conducted by Burleson biologists Ammon Rice on March 19 and April 5, 2009, and Ed Whisler on April 7, 2009. The study area was surveyed by walking pedestrian transects to assess habitat types, evaluating the potential for the occurrence of special-status species, determining the presence or absence of waters of the United States including wetlands, and determining presence or absence of protected trees.

Prior to visiting the field, a list of the special-status species with the potential to occur in the region was developed and used as a target list for rare plants and wildlife. During the field visits, wildlife observations and an inventory of existing plant species was recorded.

The field visit also included a survey for nesting birds of prey (raptors) in suitable habitat within 0.5 mile of the alignment. The biologist walked the ruderal grassland areas along CR 29, and used binoculars to observe birds around the adjacent agricultural fields. After watching and listening, the biologist searched a stand of trees about 0.28 mile west of the proposed project area with binoculars to locate stick nests. The raptor survey included a search for ground squirrel burrows that could function as burrowing owl nests. Incidental observations of wildlife species made during the field assessment were recorded.

2.7.4 Analysis Results

Vegetation Communities

The vegetation community within the proposed project area is comprised of ruderal nonnative grassland. The dominant grasses and other herbaceous vegetation include ripgut brome (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), wildoat (*Avena fatua*), fiddleneck (*Amsinckia menziesii* var. *intermedia*), Mediterranian barley (*Hordeum marinum*), cut-leaf filaree (*Erodium cicutarium*), miniature lupine (*Lupinus bicolor*), black mustard (*Brassica nigra*), yellow star-thistle (*Centaurea solstitialis*), wavyleaf soap plant (*Chlorogalum pomeridianum*), and milk thistle (*Silybum marianum*).

A roadside ditch (see the "waters" discussion below) parallels the south side of the abandoned and rerouted portions of CR 29, with upland grasses present outside of the ditch. The bottom of the ditch consists of Pescadero silty clay soils and was void of vegetation.

CNDDB Query Results

According to CDFG (California Natural Diversity Database [CNDDB] 2009) query results, there are reported occurrences of 17 special-status plant and wildlife species within 5 miles of the study area (Figure 3): alkali milk-vetch (*Astragalus tener* var. *tener*), heartscale (*Atriplex cordulata*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), palmate-bracted bird's-beak (*Cordylanthus palmatus*), Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), vernal pool tadpole shrimp (*Lepidurus packardi*), California linderiella (*Linderiella occidentalis*), California tiger salamander (*Ambystoma californiense*), giant garter snake (Thamnophis gigas), western pond turtle *(Actinemys marmorata),* burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), western snowy plover (*Charadrius alexandrinus nivosus*), white-tailed kite (*Elanus leucurus*), and silver-haired bat (*Lasionycteris noctivagans*).

Special-Status Species

For the purposes of this assessment, "special-status" is defined to include those species that are:

- Listed as endangered or threatened under the Federal Endangered Species Act (or formally proposed, or candidates, for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or candidates for listing);
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as species of special concern by the CDFG;
- Plants or animals that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA);
- Plants listed as rare under the California Native Plant Protection Act; or
- Plants considered by CNPS to be "rare, threatened, or endangered in California" (Lists 1B and 2, see Appendix B).

A list of regionally occurring special-status plant and wildlife species was compiled based on a review of pertinent literature, the results of the field assessments, the results of a CNDDB query of all reported occurrences of special-status species within the Davis, California USGS quadrangle and the surrounding eight quadrangles, a query of the CNPS Inventory of Rare and Endangered Plants database (see Appendix B: CNPS, 2009) for the Davis, California USGS quadrangle, and a species list obtained from the USFWS (Appendix B: USFWS, 2009). Habitat requirements for each special-status species were assessed and compared to the habitats occurring within the study area.

Based on the habitat requirements review and the field assessment results, the study area or the surrounding area (i.e., for raptors) provides suitable habitat for eleven (11) special-status wildlife species. These species include alkali milk-vetch (*Astragalus tener* var. *tener*), heartscale (*Atriplex cordulata*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), palmate-bracted bird's-beak (*Cordylanthus palmatus*), Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*).

Alkali milk-vetch, Heartscale, Brittlescale, San Joaquin spearscale, Palmate-bracted bird's-beak, and Heckard's pepper-grass

Alkali milk-vetch blooms between March and June and occurs in playas, valley and foothill grassland, and vernal pools with alkaline soils at elevations up to about 200 feet above msl. A population of alkali milk-vetch has been documented approximately 0.25 mile northwest of the proposed project site along Willow Slough. This population would not be affected and no special-status plant species were observed during the site surveys.

Heartscale blooms from April to October and occurs in Chenopod scrub, meadows and seeps, and valley and foothill grassland with alkaline soils up to an elevation of about 1,230 feet above msl. Brittlescale blooms from April to October and occurs in Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools with alkaline soils up to an elevation of about 1,050 feet above msl. San Joaquin spearscale blooms from April to October and occurs in Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland with alkaline soils up to an elevation of about 2,740 feet above msl. Palmate-bracted bird's-beak blooms from May to October and occurs in Chenopod scrub and valley and foothill grassland with alkaline soils up to an elevation of about 500 feet above msl. Heckard's pepper-grass blooms March to May and occurs in valley and foothill grassland with alkaline soils up to an elevation of about 650 feet above msl.

The high level of transmogrification (altered land use due to development) has removed most of the native landscape from within the study area decreasing the likelihood that the plants occur there. The species were not observed during the site survey. Several other rare plants occur regionally. No special-status plant species were observed.

Burrowing owl

The burrowing owl inhabits open, dry grasslands and deserts, as well as open stages of pinyon-juniper and ponderosa pine. The nesting season is between February 1 and August 31. Burrowing owls typically nest in abandoned rodent burrows, particularly those of California ground squirrels, which they modify each year. Burrowing owls forage in open grassland areas adjacent to nest sites. The species has also been documented in open areas near human habitation, especially airports and golf courses. The Central Valley and surrounding foothill regions of California provide year-round habitat for the burrowing owl.

A pair of burrowing owls was observed along the north embankment of CR 28H, at least 1,100 feet east of CR 102. The study area provides marginally suitable grassland habitat

adjacent to the agricultural fields. No burrowing owls or signs of them were observed within 500 feet of the proposed project site.

Swainson's hawk

Swainson's hawks require large areas of foraging habitat, preferably grassland or pasture habitats. Preferred prey items are voles (*Microtus* sp.), gophers (e.g., *Thomomys bottae*), birds, and insects such as grasshoppers. They have also adapted to foraging in some cropland habitats such as alfalfa, grain crops, tomatoes, beets, and other row crops. Crops such as cotton, corn, rice, orchards, and vineyards are not suitable since they either lack suitable prey or the prey is unavailable to the Swainson's hawk because of the crops structure. In the Central Valley, Swainson's hawk is generally associated with riparian habitat for nesting sites.

A pair of Swainson's Hawks was observed performing courtships flights around a farmhouse approximately 0.28 mile west of the project site along CR 29. They made several low flights through the trees at the farmhouse. They did not show interest in any particular tree; however, they are likely to nest in the stick nests observed within the trees surrounding the farmhouse. The Swainson's hawk nesting habitat is more than 0.25 mile from the proposed project site and within an urban environment. Therefore, the proposed project is not likely to affect the Swainson's hawk.

Loggerhead shrike

The loggerhead shrike prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches located in open-canopied valley foothill hardwood, valley foothill hardwood conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Loggerhead shrikes skewer their prey to thorns or barbs on barbed-wire fences. The purpose of this trait may be to help kill the prey or to cache the food for later consumption. Loggerhead shrikes are found in lowlands and foothills throughout California. One loggerhead shrike was observed during the field surveys approximately 0.35 mile east of the proposed project site, but its nest was not observed.

White-tailed kite

The white-tailed kite can be found in association with the herbaceous and open stages of a variety of habitat types, including open grasslands, meadows, emergent wetlands, and agricultural lands. Nests are constructed near the top of dense oaks, willows, or other tree stands located adjacent to foraging areas. The species forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. White-tailed kite are seldom observed more than 0.5 mile from an active nest during the breeding season. The white-tailed kite is found year-round in both the coastal zones and lowlands of the Central Valley in California. No white-tailed kites were observed during field surveys.

Other raptors (red-tailed hawk, northern harrier, Cooper's hawk, sharp-shinned hawk)

The study area could support other raptor species, including those listed here and others that do not qualify as special-status species. All raptor species, including relatively common species (e.g., red-tailed hawks) and their nests are protected from take under California Fish

and Game Code Section 3503.5. The raptor survey conducted within 0.5 mile of the site included a stand search in which all trees were searched for stick nests. An occupied raptor nest was observed in a radio tower approximately 0.4 mile east of the proposed project site and south of CR 29. Red-tailed hawks often build their nests in lattice towers; however, the identity of the hawk could not be determined because it was staying very low in the nest to avoid the wind. A Northern harrier was observed foraging within and adjacent to the proposed project site; however, no nests were observed.

2.7.5 Waters of the United States and Wetlands Habitats

A roadside ditch was observed and documented south of and adjacent to the abandoned portion of CR 29. The ditch habitat appears to catch surface water runoff from adjacent uplands and roads during winter storm events. The ditch features are scoured with very little vegetation growing within the channel. The dominant grasses and forbs along the banks and upland areas include ripgut brome (*Bromus diandrus* – obligate upland plants [UPL]), Italian ryegrass (*Lolium multiflorum* – facultative plant [FAC]), wildoat (*Avena fatua* – UPL), fiddleneck (*Amsinckia menziesii* var. *intermedia* – UPL), Mediterranian barley (*Hordeum marinum* – FAC), cut-leaf filaree (*Erodium cicutarium* – UPL), black mustard (*Brassica nigra* – UPL), yellow star-thistle (*Centaurea solstitialis* – UPL), miniature lupine (*Lupinus bicolor* – UPL), and milk thistle (*Silybum marianum* – UPL)[1].

The roadside ditch does not connect to any other wetland features. The feature is isolated with a 3 to 5 percent grade to the east. The soils observed in the roadside ditch are clay with a matrix color of 5GY 7/3. A soil pit was dug to a depth of 14 inches and the soil was saturated. Surface water was present in the lowest spot of the ditch during the April 5 survey.

On June 5, 2007 the U.S. EPA and the USACE issued a memorandum providing guidance on interpreting the U.S. Supreme Court "Rapanos Decision" (June 19, 2006 *Rapanos et ux., et al v. U.S. Army Corps of Engineers*). This guidance states that ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not waters of the U.S. (Grumbles and Woodley, 2007). Therefore, it is determined that the features documented by Burleson do not currently qualify as waters of the U.S.

2.7.6 Protected Trees

Yolo County is currently undergoing a comprehensive General Plan update. This process will include a review of existing ordinances and policies and will discuss policies and actions related to oak woodland conservation and management. However, no trees were observed within the proposed project site or within 500 feet.

1 FAC = Facultative Plants estimated probability of occurring in wetland 33 percent to 67 percent
UPL = Obligate Upland Plants estimated probability of occurring in wetland <1 percent

2.7.7 Biological Resources Conclusions and Recommendations

Based on information in the 1994 Commission Decision, search of the CNDDB database and supplemental confirmatory fieldwork, the following conclusions have been made:

- The habitat in the project area is dominated by ruderal nonnative grassland and surrounded by cropland. There are no intact rare habitats in the vicinity.
- The project would cross one roadside drainage ditch that is not considered to be jurisdictional.
- A population of alkali milk-vetch was documented during the 1993 surveys of the SMUD Cogeneration Pipeline Project. The population was documented on the west side of Willow Slough, approximately 0.25 mile northwest of the proposed project site. No special-status plant species were observed during the site surveys.
- A pair of Swainson's hawks was observed performing courtships flights above the farmhouse approximately 0.28 mile west of the proposed construction area and are likely nesting there. The Swainson's hawk nesting habitat is more than 0.25 mile from the proposed project site and within an urban environment. Therefore, the proposed project is not likely to affect the Swainson's hawk.
- A pair of burrowing owls was observed along the north embankment of CR 28H, at least 1,100 feet east of CR 102. No burrowing owls or signs of them were observed within 500 feet of the proposed project site.

Therefore, in addition to complying with current laws and regulations, the existing Conditions of Certification are adequate to protect the environment with respect to biological resources.

2.8 Socioeconomics

The 1994 Commission Decision concluded that the project would not have a significant adverse effect on traditional socioeconomic issues including employment, housing, schools, medical, wastewater facilities, tax revenues, and fire and police protection. This project modification would require fewer than fifteen construction workers during the approximate two weeks for project construction and would have a smaller impact on Yolo County local housing and population than the original pipeline projects.

The Conditions of Certification included the following:

- **SOCIO-1:** The project owner and its contractors and subcontrators shall recruit employees and procure materials and supplies within the local area to the fullest extent possible under federal and state statues.

The findings of the 1994 Commission Decision would remain adequate to avoid adverse impacts to socioeconomic resources.

2.9 Land Use

The 1994 Commission Decision determined that, with implementation of the Conditions of Certification, the project was compatible with existing and planned land uses, and land use plans for counties and cities within the project area. This included compatibility with the Yolo County General Plan and the City of Davis's Sphere of Influence, regulations under the Airport Land Use Commission for Yolo County Airport and the Delta Protection Commission. The CEC found that the project was not incompatible with the land use and that land use disturbances would be temporary and occur during construction.

A summary of the Conditions of Certification applicable to the modification and Yolo County location include the following:

- **LAND-1:** The project owner shall coordinate the construction with all affected jurisdictions (Yolo County) and local service providers to utilize a common trench for infrastructure where feasible.
- **LAND-3:** The pipeline will be buried with a minimum earth cover of six feet in the Yolo County Airport approach/departure zone.

The proposed modification does not affect the uses or conditions of the land. Short-term construction would involve trenching and pipeline construction followed by backfilling and grading. The existing pipeline is currently buried within the same parcel and this pipeline modification will tie into the existing line at the same depth. No adverse land-use impacts are expected during pipeline construction. The existing Conditions of Certification will continue to protect land use resources.

2.10 Visual Resources

The 1994 Commission Decision noted short term visual impacts of the project resulting from construction activities and that these activities would last from two to three weeks at a given site. Once completed the underground piping would have only a few visual impacts, consisting of the paddle-type pipeline markers that would be placed where the pipeline crossed significant surface features. Based on preliminary designs, there would be no additional aboveground structures, meter or regulator stations, test and valve stations, pig traps or aerial markers added in the realigned section of pipe. However, there are existing paddle-type pipeline markers, Pacific Bell underground cable signs, telephone pedestals, and electric lines at the site (see Figure 3).

The 1994 Commission Decision determined that visual impacts were temporary, and with mitigation measures implemented, were not significant. The Conditions of Certification required restoring vegetation after construction and landscaping above-ground features. At the location for the modification, the dominant vegetation is ruderal nonnative grassland, and it is SMUD's intent that the site be passively restored by the existing site vegetation, once the soil in the trenched area has been replaced and graded.

The Condition of Certification applicable to this Yolo County location is paraphrased as follows:

- **VIS-1:** The project owner shall limit construction of the pipeline to daylight hours to eliminate nighttime light and glare.

Implementation of the condition applied to the 1994 Commission Decision will adequately protect visual resources from adverse impacts.

2.11 Cultural Resources and Native American Coordination

The 1994 Commission Decision found that the original pipeline route would not impact known cultural resources, but that previously unknown cultural resources may still exist. Therefore, a cultural resources survey was completed for the project area that overlapped the larger area previously surveyed and reported for the original pipeline installation. The cultural resources survey was completed under the provisions of Section 106 of the National Historic Preservation Act (NHPA) (36 Code of Federal Regulations [CFR] 800) and CEQA (California Public Resources Code [PRC] Section 21000).

The 1994 Commission Decision included seven conditions to protect cultural resources:

- **CUL-1:** Requires designation of a cultural resources specialist.
- **CUL-2:** Requires the cultural specialist to provide guidance for protection.
- **CUL-3:** Requires the cultural specialist be available and prepared to implement necessary monitoring and mitigation measures.
- **CUL-4:** Requires the recovery, preparation for analysis and delivery for curation of all significant cultural resource materials.
- **CUL-5:** Requires preparation of a cultural resources report.
- **CUL-6:** Requires a final cultural resources report.
- **CUL-7:** Requires the final report be delivered to the regional archaeological information center.

2.11.1 Cultural Literature Search

A cultural resources record search was conducted by the Northwest Information Center (NCIC) of the California Historical Resources Information System at Sonoma State University, Rohnert Park, California on April 3, 2009 (see Appendix C). The records search was to determine if archaeological studies have previously occurred in or near the project area, and to identify the presence of previously recorded cultural resources in or within a ½ mile radius of the project area. The records search information is provided in Appendix C. The records search revealed that one cultural resource study has occurred within the project area and four cultural resources studies have occurred within a ½ mile radius of the project area:

Within the project area:

- S-15985, Janis Offerman, 1994, Archaeological Survey Report, proposed replacement of Bridge No. 22C-076, 03-YOL-CR 03804-962053, Caltrans

Within ½ mile of the project area:

- S-015333, Sharon A. Waechter, 1993, Report on the First Phase of Archaeological Survey for the Proposed SMUD Gas Pipeline between Winters and Sacramento, Yolo, and Sacramento Counties, California, Far Western Anthropological Research Group, Inc.
- S-017674, Woodward-Clyde Consultants, 1995, Cultural Resources Monitoring Report for the SMUD Cogeneration Pipeline Project, Woodward-Clyde Consultants
- S-035031, URS, 2008, Cultural Resources Baseline Literature Review for the Urban Levee Project, URS
- S-035107, Janis Offerman, 2008, Willow Slough Bypass Slip Site Repair; Archaeological Survey Report, Department of Water Resources

All of these studies were negative for the presence of cultural resources within or adjacent to the project. The records search results identified one previously recorded prehistoric cultural resource (an isolated "granite mano") within ½ mile of the project area, reported in the S-017674 study.

The records search also included examination of other references on file at the Information Center to identify listed properties within ½ mile radius of the project area. These included:

- Office of Historic Preservation Historic Property Directory & Determinations of Eligibility (2007)
- California Inventory

2.11.2 Native American Sacred Lands File Search and Coordination

In addition to the records search, the Native American Heritage Commission (NAHC) was contacted on March 30, 2009 and April 10, 2009 (via telephone) with regard to the project. NAHC examined their Sacred Lands File for sites or traditional cultural properties present in or near the project area. On April 16, 2009, the NAHC provided a list of Native American individuals and organizations who may have interests or concerns about the project, or who might share knowledge about other cultural resources in or near the project area. On April 20, 2009, letters regarding the project were sent to those individuals and groups to solicit information they may have regarding the project area. No responses from these contacted individuals were received. A copy of the NAHC correspondence is provided in Appendix C.

2.11.3 Cultural Resources Field Methods

An intensive pedestrian survey of the project area was conducted by Burleson archaeologist, Henry Davis, on March 6, 2009, utilizing maps that detailed the project area. The survey included a complete surface inspection of the project area. Transects, averaging 5 meters in width, were walked across the project area. The area was dense with vegetation and had poor visibility. Ground scrapes were made with a hoe to facilitate inspection of the soil. The soil surface appeared to be disturbed by road construction and two drainage ditches. Various gravels were evident in the surface soil. Modern debris included two bicycle frames and pieces of furniture.

No new sites or cultural resources were identified in the project area as a result of the field survey.

2.11.4 Significance Criteria

In considering impact significance under CEQA, the significance of the resource itself must first be determined. Generally, under CEQA, a historical resource (these include both built-in environment and archaeological resources) is considered significant if it meets the criteria for listing on the California Register of Historical Resources (CRHR). Criteria for inclusion on the CRHR are set forth in CEQA Guidelines, Section 15064.5 and defined as follows:

(a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(b) Is associated with lives of persons important in our past;

(c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(d) Has yielded, or may be likely to yield, information in prehistory or history.

Section 15064.5 of CEQA Guidelines also assigns special importance to the remains of Native Americans and specifies procedures to be used when human remains are discovered. These procedures are spelled out under PRC Section 5097.98. Criteria for eligibility for the CRHR are very similar to those (detailed below) which qualify a property for the National Register of Historic Places (NRHP), under NHPA. Note that a property that is eligible for the NRHP is also eligible to the CRHR.

Impacts to "unique archaeological resources" are also considered under CEQA, as described under PRC Section 21083.2. A unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets one of the following criteria:

(a) Contains information needed to answer important scientific questions and there is a demonstrable public interest in that information

(b) Has a special and particular quality, such as being the oldest of its type or the best available example of its type

(c) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource means an archaeological artifact, object, or site which does not meet the above criteria.

To determine site significance through application of National Register criteria, several levels of potential significance which reflect different (although not necessarily mutually exclusive) values must be considered. As provided in 36 CFR 60.4:

> *The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and*
>
> 1. *That are associated with events that have made a significant contribution to the broad patterns of our history; or*
> 2. *That are associated with the lives of persons significant in our part; or*
> 3. *That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
> 4. *That have yielded, or may be likely to yield, information important in prehistory or history.*

Under CEQA, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of a 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 non-unique and non-significant 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 NHPA (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).

In some cases, determination of a resource's eligibility to the NRHP or CRHR (for its uniqueness) can be made only through extensive research, archaeological testing, and other costly and time-consuming methods. Where possible, to the maximum extent possible, resources will be avoided. If upon agency review of this petition there are resources that remain unevaluated and they cannot be avoided, formal eligibility evaluation will be undertaken. If the resource meets the criteria of eligibility to the NRHP, CRHR or is a unique archaeological resource, it will be formally addressed under Section 106 procedures as set forth under 36 CFR 800 and/or Section 21084.1 of California PRC and Sections 15064.5 and 15126.4 of the CEQA Guidelines.

2.11.5 Cultural Resources Findings

The records search and pedestrian survey did not identify any previously recorded cultural resources in or adjacent to the project area. Although there have been four cultural resource studies within a ½ mile radius of the project area and one study within the project area, no cultural resources were recorded within the project area and the archaeological inventory survey did not identify any cultural resources within the project area. Based on review of the current cultural resources survey, and in addition to complying with current laws and regulations, the Conditions of Certification are considered adequate to protect cultural resources for this modification.

2.12 Traffic and Transportation

The 1994 Commission Decision evaluated a much longer project area than the pipeline modification proposed herein. As a result, the Commission had to consider potential interference with traffic on several major thoroughfares. A summary of the original Conditions of Certification that are applicable for this location of the modification proposed, include the following:

- **TRANS-1:** Obtaining necessary oversize and overweight permits.
- **TRANS-2:** Comply with County and City requirements for encroachment on public right of ways.
- **TRANS-3:** Limit construction to daylight hours, in rural and suburban areas to 6 a.m. to 8 p.m. weekdays, and 7 a.m. to 6 p.m. on weekends.
- **TRANS-4:** Encourage and support carpooling.
- **TRANS-5:** Use standard underground construction methods including signs, barriers, lights, flagmen, temporary access across trenches, cover with steel plates where the trench must remain open overnight, etc.
- **TRANS-7:** Observe all federal and state regulations for transport of hazardous materials.
- **TRANS-9:** Develop a construction mitigation plan with recommendations from Yolo County to address traffic control, protection of existing utilities and other specifications.

Based on the description of the modification with respect to the duration of construction, the type and number of vehicles and trips the construction is likely to generate, the location of the project relative to major transportation corridors and thoroughfares, and the Conditions of Certification in the 1994 Commission Decision, the relative contribution of traffic and potential impacts to transportation are likely to be minor. SMUD would obtain an encroachment permit from Yolo County for staging on the abandoned CR 29 if needed. The Yolo County Encroachment Permit will provide instructions regarding lane closure activies. The traffic mitigation plan will be provided to the CEC 30 days prior to the start of construction.

With the implementation of TRANS-9, particularly—requiring a construction mitigation plan—in addition to complying with current laws and regulations, the existing Conditions of Certification are adequate to protect the environment with respect to traffic and transportation.

2.13 Hazardous Materials Management

The 1994 Commission Decision described the analysis of potential risks to the public and identified that natural gas was the only component that had the potential to cause significant impact. The primary focus of the analysis was a large release of natural gas. Several experts were consulted and provided testimony. SMUD committed to develop, obtain approval for, and implement all safety and maintenance programs required by law, including:

- Pipeline Project Health and Safety Manual
- Emergency Action Plan
- Injury and Illness Prevention Plan

The 1994 Commission Decision included conditions for implementing additional safety measures, adding stainless steel warning tags, preparation of a Safety Management Plan Emergency Preparedness Plan, a SCADA system, burial depths and additional earth cover, and utilization of enhanced safety design factors that exceeds the federal standards, inspection of all welds, and annual compliance reporting.

The applicable Conditions of Certification for this modification and location are paraphrased as follows:

- **HAZMAT-2:** The project owner shall provide a detailed Safety Management Plan.
- **HAZMAT-3:** The project owner shall develop and implement an Emergency Preparedness Plan.
- **HAZMAT-4:** The project owner shall identify all operational controls and engineered protective systems critical to avoidance of natural gas releases.
- **HAZMAT-6:** The project owner shall design the project in accordance with applicable DOT regulations, the latest California Public Utilities Commission General Order, and design safety factors required by applicable laws, ordinances, regulations, and standards.
- **HAZMAT-7:** During construction the project owner shall ensure that all welds are inspected, hydrostatic strength testing pressures are higher than required by DOT regulations, proper blowdown procedures are implemented, and below ground warning tape is installed in urban areas.
- **HAZMAT-8:** Project owner shall report to CEC the results of all required inspections of the safety design and construction requirements, in an Annual Compliance Report.

SMUD's Power Generation and System Operation & Reliability departments maintain and operate the gas pipeline. Supervisory control and data acquisition (SCADA) and leak detection system (LDS) equipment installed on the pipeline facilities continuously monitors and reports system information to the SMUD Energy Control Center through an Energy Management System. The Energy Control Center is staffed 24 hours a day by SMUD Power System Operators. Examples of the type of information and control provided by SCADA and LDS include valve positions, pressures, line rupture control, leak detection, and gas flow rate, temperature, and quality. The pipeline includes six automated mainline valves capable of sensing a pipeline rupture and closing automatically.

The Conditions of Certification imposed in the 1994 Commission Decision are adequate to prevent significant adverse impacts from hazardous materials during construction and operation of this pipeline modification.

2.14 Industrial Safety and Fire Protection

The 1994 Commission Decision described the analysis of the proposed safety measures to protect the workers during construction. The Commission concluded that with SMUD providing the safety plans and documents listed in the Conditions of Certification, the CEC would be able to monitor the construction for compliance with the laws, ordinances, regulations, and standards that pertain to fire protection and worker safety.

The Conditions of Certification are paraphrased as follows:

- **SAFETY-1:** The project owner shall submit a copy of the SMUD Pipeline Project Health and Safety Manual to Cal-OSHA. The CEC Project Manager shall have access to the site during construction to verify the implementation of the manual.
- **SAFETY-2**: The project owner shall obtain approval of the Emergency Action Plan from Cal-OSHA.
- **SAFETY-3**: The project owner shall obtain approval of the IIPP from Cal-OSHA.

For the purposes of SMUD's petition, compliance with the existing safety conditions of certification should suffice to protect project personnel and assure compliance with laws, ordinances, regulations, and standards. SMUD maintains and implements a full complement of safety plans and procedures required by law including:

- Injury & Illness Prevention Program (IIPP), in accordance Title 8 California Code of Regulations (CCR) Sections 1509 and 3203, as part of SMUD's Health & Safety Standards.
- Emergency Action Plan, in accordance with Title 8 CCR Sections 3220 and 3221, and Title 29 Code of Federal Regulations (CFR) Sections 1910.38 and 1926.35, as part of our Standard District Policies (SDP).
- Gas Pipeline Operations Procedures Manual for operations, maintenance, and emergencies in accordance with Title 49 CFR Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards

As part of SMUD's IIPP, SMUD's Contractor Safety Procedure will be implemented during project construction, including verification that the contractor's has a written IIPP, written Code of Safe Practices, and written plan for employee emergency medical services. Furthermore, the contractor will provide SMUD with a project and site-specific safety plan.

Therefore, the Conditions of Certification are adequate to ensure safety and fire prevention during construction and operation of this pipeline modification.

2.15 Geological Hazards and Resources

The 1994 Commission Decision describes that the Commission examined the pipeline project to determine whether SMUD had adequately considered geologic and seismic conditions and hazards that affect the design, construction and operation of the proposed facility in order to ensure safe and reliable operation. In addition, the Commission examined the potential impacts on geologic resources in the event the project would disturb or limit access to mineral, gem, or fossil deposits (CEC, 1994). It was determined that because the project would be buried, the project exposure to natural hazards was limited to floods and earthquakes. The 1994 Commission Decision noted that design features intrinsic to the pipeline, such as automatic shutoff valves and thicker-walled steel pipe, would maintain the integrity and safety of the line in the event of an earthquake. The design and materials required by SMUD to construct a safe pipeline remain in effect to the present, and the new pipe would be constructed to the same or superior standards. This would ensure the pipe is safe from earthquake or other geologic hazards (CEC, 1994).

In the 1994 Commission Decision, potential impacts to paleontological resources were considered impacts to geological resources. Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under federal (National Environmental Policy Act [NEPA]), State (CEQA), and local (Yolo County) laws and regulations. This Petition satisfies project requirements in accordance with CEQA (13 PRC, 2100 et seq.), Public Resources Code Section 5097.5, and requirements set forth by the CEC.

The following Conditions of Certification were included in the 1994 Commission Decision, as paraphrased:

- **GEOLOGY-1:** The project owner shall designate a qualified environmental monitor, with experience in identifying paleontological resources.
- **GEOLOGY-2:** The project owner shall secure an agreement with the Museum of Paleontology to assist in salvage and curation of any fossil discoveries.
- **GEOLOGY-3:** The environmental monitor shall monitor construction activities for fossil specimens, and shall halt excavation activities in the event of a fossil find until the necessary collection and field studies are completed.
- **GEOLOGY-4:** The project owner shall recover and transport paleontological resource materials collected at the site for curation.

The following sections describes the geologic setting and evaluation of paleontological resources.

2.15.1 Geologic Setting

The project area lies within the Great Valley geomorphic province of California, which is dominated by alluvial plains and low relief alluvial fans. The Great Valley province is divided into two sub-basins: the Sacramento basin to the north and the San Joaquin basin to the south. The project area is situated within the southern part of the Sacramento basin, west of the Sacramento River and is underlain by flood basin deposits.

Flooding of the Sacramento River during the Holocene created quiet and nearly lacustrine conditions during which time flood basin sediments of silty clays and clayey silts were deposited. These flood basin deposits are locally at least 5 feet in depth. Although these sediments are too geologically young to contain fossilized remains, this unit is underlain by older paleontologically sensitivity sediments (URS, 2007).

2.15.2 Paleontological Sensitivity

Due to the nature of the fossil record, paleontologists cannot know either the quality or the quantity of fossils present in a given geologic unit prior to natural erosion or human-caused exposure. Therefore, in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce scientifically significant fossils elsewhere within the same geologic unit (both within and outside of the study area) or a unit representative of the same depositional environment.

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources," the SVP defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontologic resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas that contain potentially datable organic remains older than recent, including deposits associated with nests or

middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant.

- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.
- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.
- **No Potential.** Metamorphic and granitic rock units do not yield fossils and therefore, have no potential to yield significant nonrenewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within the study area (URS, 2007).

2.15.3 Paleontological Resources Findings

Burleson conducted a paleontology specimen search with the University of California Museum of Paleontology's (UCMP) online database on April 10, 2009 (UCMP, 2009). The records search revealed that a significant locality had been previously recorded within 11 miles of the project area. The UCMP locality V96015 in the Modesto Formation at Willow Slough yielded fossilized rodent teeth, and cranial fragments of more than 40 rodents, and vertebra from a reptile (UCMP, 2009).

2.15.4 Professional Standards

The Society of Vertebrate Paleontologists (SVP) has established standard guidelines (SVP, 1995) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery sampling procedures, and specimen preparation, identification, analysis, and curation (URS, 2007). Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological laws, ordinances, regulations, and statutes accept and utilize the professional standards set forth by the SVP (URS, 2007).

As defined by the SVP, significant nonrenewable paleontological resources are defined as:

> *…Fossils and fossiliferous deposits here restricted to vertebrate fossils and their taphonomic and associated environmental indicators. This definition excludes invertebrate or paleobotanical fossils except when present within a given vertebrate assemblage. Certain invertebrate and plant fossils may be defined as significant by a project paleontologist, local*

> *paleontologist, specialists, or special interest groups, or by lead agencies or local governments.*

As defined by the SVP, significant fossiliferous deposits are defined as:

> *A rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways, or nests and middens which provide datable material and climatic information). Paleontologic resources are considered to be older than recorded history and/or older than 5,000 years, BP (before present).*

Based on the significance definitions of the SVP, all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies (URS, 2007).

A geologic unit known to contain significant fossils is considered to be "sensitive" to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either disturb or destroy fossil remains directly or indirectly. This definition of sensitivity differs fundamentally from that for archaeological resources as follows:

> *It is extremely important to distinguish between archaeological and paleontological (fossil) resource sites when defining the sensitivity of rock units. The boundaries of archaeological sites define the areal extent of the resource. Paleontologic sites, however, indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both a real and stratigraphic, therefore define the scope of the paleontologic potential in each case.*

Many archaeological sites contain features that are visually detectable on the surface. In contrast, fossils are contained within surficial sediments or bedrock and are, therefore, not observable or detectable unless exposed by erosion or human activity. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken in order to prevent adverse impacts to these resources (URS, 2007).

2.15.5 Paleontological Resources Conclusions

In the 1994 Commission Decision, potential impacts to paleontological resources were considered impacts to geological resources. The museum records search of vertebrate

collections maintained by the UCMP confirmed that at least one significant vertebrate fossil locality has been previously recorded from the Modesto Formation at Willow Slough about 11 miles from the project area. Project construction may result in adverse impacts to significant paleontological resources unless proper mitigation measures are implemented. Based on the paleontological sensitivity of the Modesto Formation underlying the study area, project-specific monitoring should be implemented to reduce impacts to less than significant.

The Conditions of Certification imposed in the 1994 Commission Decision are adequate to prevent significant adverse impacts to paleontological resources.

3.0 POTENTIAL COMPLIANCE AND LANDOWNER IMPACTS

The following subsections respond to specific requirements of Section 1769(a) of the California Energy Commission' Siting Regulations (20 CCR § 1769(a)), regarding potential impacts to the facility's compliance with laws, ordinances, regulations, and standards and also the potential impacts of the modification on the public and nearby property owners.

3.1 Impacts the Modification May Have on the Facility's Ability to Comply with Applicable Laws, Ordinances, Regulations, and Standards

The project modification, as proposed, would have no adverse effect on the ability of the certified facility to comply with applicable laws, ordinances, regulations, and standards. The pipeline would continue to operate in compliance with all applicable laws, ordinances, regulations, and standards.

3.2 How the Modification Affects the Public

The project modification, as proposed, will continue to be in compliance with the Conditions of Certification, and applicable laws, ordinances, regulations and standards. As such, the project modification would have no significant effect on the public.

3.3 Property Owners Potentially Affected by the Modification

Property owners within 0.5 mile of the proposed pipeline alignment were identified through a search of Yolo County title records. The list is attached to this Petition as Appendix D.

3.4 Potential Effect on Nearby Property Owners, the Public and Parties in the Application Proceedings

Project construction would be visible as a small construction project to the residence on CR 29 about 0.28 mile west of the project, and to property owners on CR 29 east of CR 102 for a period of two weeks during the fall. The project would generate minor amounts of dust that would probably not be noticeable in the context of local ongoing agricultural operations in the vicinity. The project would generate construction-related noise for two weeks during the fall. Based on review of the project and existing Conditions of Certification, and in addition to complying with current laws, ordinances, regulations, and standards, the existing Conditions of Certification are considered adequate to protect the environment and the impact to nearby property owners, the public, and parties in the application proceeding should be minimal.

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4.0 REFERENCES

California Air Resources Board. 2007. Staff Report California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16. Available online: http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf. Accessed April 27, 2009.

California Department of Fish and Game. 2009. California Natural Diversity Database, Rare Find Version 3.0.5. Last updated February 2, 2009. Available online: http://www.dfg.ca.gov/bdb/html/cnddb.html. Accessed February 16, 2009.

California Energy Commission (CEC). 1994. Commission Decision Application for Certification for the SMUD Cogeneration Pipeline Project, Sacramento and Yolo Counties, CEC Docket No. 92-AFC-2P. May.

California Native Plant Society (CNPS). 2009. Inventory of Rare and Endangered Plants (online edition, v7-09a). California Native Plant Society. Sacramento, CA. http://www.cnps.org/inventory. Accessed February 16, 2009.

Grumbles and Woodley. 2007. Clean Water Act jurisdiction following the U.S. Supreme Court decision in *Rapanos v. United States and Carabell v. United States*. Joint memorandum issued by Environmental Protection Agency and U. S. Army Corps of Engineers on June 5, 2007.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2004. CEQA Guide to Air Quality Assessment. Available online: www.airquality.org/ceqa/2004 AQMD CEQA Guidelines.pdf. Accessed March 23, 2009.

SMAQMD. 2009. Roadway Construction Emissions Model (Version 6.3.1, Nov. 2008). Available at www.airquality.org/ceqa/index.shtml. Accessed April, 2009.

SMUD. 2009a. Personal communication between Dickson Clark (SMUD) and Beth Kelly (Burleson Consulting, Inc.) on March 19, 2009.

SMUD. 2009b. Personal communication between Dickson Clark (SMUD) and Joel Reisman (Burleson Consulting, Inc.) on April 2, 2009.

Sacramento Municipal Utility District (SMUD). 1993. SMUD Cogeneration Pipeline Project Biological Resource Mitigation and Monitoring Plan. Presented to the CEC. September.
Society of Vertebrate Paleontology (SVP). 1995. Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines. *Society of VertebratePaleontology News Bulletin.*

University of California Museum of Paleontology (UCMP). 2009. Specimen Search at: http://ucmpdb.berkeley.edu/. Accessed April 10 2009.

URS. 2007. Petition for Insignificant Project Modification. Natural Gas Pipeline Relocation Around Proposed Cosumnes River Boulevard Interchange. SMUD Cogeneration Pipeline Project Docket. June.

References

USDA Natural Resource Conservation Survey. 2009. Custom Soil Resource Report for Yolo County, California. http://soils.usda.gov/survey/WSS_update.html. Accessed March 16, 2009.

U.S. Fish and Wildlife Service (USFWS). 2009. Sacramento office, Species List Database. Accessed January 29, 2009.

Western Region Climate Center. 2009. Period of Record Monthly Climate Summary for the Davis 1 WSW, California (042294) station. http://www.wrcc.dri.edu. Accessed February 16, 2009.

Yolo-Solano Air Quality Management District (YSAQMD). 2007. "Handbook for Assessing and Mitigating Air Quality Impacts." Available online at www.ysaqmd.org/CEQA.php. Accessed March 23, 2009.

Roadway Construction Emissions Models Input and Results

Road Construction Emissions Model, Version 6.3.1

Emission Estimates for -> SMUD Yolo Gas Pipeline Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	3.5	15.4	16.2	6.1	1.1	5.0	2.0	1.0	1.0	1,898.7
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (pounds/day)	3.5	15.4	16.2	6.1	1.1	5.0	2.0	1.0	1.0	1,898.7
Total (tons/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	10.4

Notes:

Project Start Year ->	2009
Project Length (months) ->	1
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	1
Total Soil Imported/Exported (yd^3/day)->	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> SMUD Yolo Gas Pipeline Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	1.6	7.0	7.4	2.8	0.5	2.3	0.9	0.4	0.5	863.0
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (kilograms/day)	1.6	7.0	7.4	2.8	0.5	2.3	0.9	0.4	0.5	863.0
Total (megagrams/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.5

Notes:

Project Start Year ->	2009
Project Length (months) ->	1
Total Project Area (hectares) ->	0
Maximum Area Disturbed/Day (hectares) ->	0
Total Soil Imported/Exported ($meters^3$/day)->	31

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 6.3.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Input Type		
Project Name	SMUD Yolo Gas Pipeline	
Construction Start Year	2009	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	0.5	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.03	miles
Total Project Area	1.0	acre
Maximum Area Disturbed/Day	0.5	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.0	yd^3/day
Soil Exported	40.0	yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.50	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.50	0.50						

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions	User Override of Soil Hauling Defaults	Default Values
User Input		
Miles/round trip	40.00	30
Round trips/day	2.00	2

Vehicle miles traveled/day (calculated)	80

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	1.19	15.82	8.52	0.62	0.53	1847.96
Emission rate (grams/trip)	12.14	8.36	214.37	0.02	0.01	229.92
Pounds per day	0.3	2.9	3.4	0.1	0.1	327.7
Tons per contruction period	0.00	0.02	0.02	0.00	0.00	1.80

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip	20.00	20
One-way trips/day	30.00	2
No. of employees: Grubbing/Land Clearing	0.00	1
No. of employees: Grading/Excavation	15.00	3
No. of employees: Drainage/Utilities/Sub-Grade	0.00	3
No. of employees: Paving	0.00	4

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.195	0.332	3.340	0.034	0.019	426.170
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Paving (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	1.048	0.435	10.085	0.120	0.011	190.980
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Paving (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Drainage/Utilities/Sub-Grade	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Drain/Util/Sub-Grade	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Paving	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Paving	0.000	0.000	0.000	0.000	0.000	0.000
tons per construction period	0.000	0.000	0.000	0.000	0.000	0.000

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust	0.00	1	0.00	40
Grading/Excavation - Exhaust	1.00	1	0.00	40
Drainage/Utilities/Subgrade	0.00	1	3.00	40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Grading/Excavation (grams/mile)	1.19	15.82	8.52	0.62	0.53	1847.96

Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation		0.5	5.0	0.0	1.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0	0.0	0.0	0.0	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Graders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1	Excavators	0.82	3.29	6.31	0.37	0.34	547.36
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Tractors/Loaders/Backhoes	0.46	4.31	3.12	0.16	0.15	654.76
0.00		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
4.00		Welders	1.86	4.37	3.94	0.43	0.40	368.87
	Grading/Excavation	pounds per day	3.1	12.0	13.4	1.0	0.9	1571.0
	Grading	tons per phase	0.0	0.1	0.1	0.0	0.0	8.6

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
4.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Drainage	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Cranes	0.00	0.00	0.00	0.00	0.00	0.00

0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Graders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.1	0.0	0.0	8.6

Equipment default values for horsepower, load factor, and hours/day can be overridden in cells C285 through C317, E285 through E317, and G285 through G317.

Equipment		Default Values Horsepower		Default Values Load Factor		Default Values Hours/day
Aerial Lifts		60		0.46		8
Air Compressors		106		0.48		8
Bore/Drill Rigs		291		0.75		8
Cement and Mortar Mixers		10		0.56		8
Concrete/Industrial Saws		19		0.73		8
Cranes		399		0.43		8
Crushing/Proc. Equipment		142		0.78		8
Excavators		168		0.57		8
Forklifts		145		0.30		8
Generator Sets		549		0.74		8
Graders		174		0.61		8
Off-Highway Tractors		267		0.65		8

Off-Highway Trucks		479		0.57		8
Other Construction Equipment		75		0.62		8
Other General Industrial Equipment		238		0.51		8
Other Material Handling Equipment		191		0.59		8
Pavers		100		0.62		8
Paving Equipment		104		0.53		8
Plate Compactors		8		0.43		8
Pressure Washers		1		0.60		8
Pumps		53		0.74		8
Rollers		95		0.56		8
Rough Terrain Forklifts		93		0.60		8
Rubber Tired Dozers		357		0.59		8
Rubber Tired Loaders		157		0.54		8
Scrapers		313		0.72		8
Signal Boards		20		0.78		8
Skid Steer Loaders		44		0.55		8
Surfacing Equipment		362		0.45		8
Sweepers/Scrubbers		91		0.68		8
Tractors/Loaders/Backhoes		108		0.55		8
Trenchers		63		0.75		8
Welders		45		0.45		8

0

END OF DATA ENTRY SHEET

CALCULATE NET INCREASE IN GHG EMISSIONS FROM PIPELINE PURGING

Given: **4.27E+06** scf of pipeline gas would be in the 9.7 miles of pipeline (at 600 psi) that would need to be purged (Per email from Dickson Clark, SMUD engineer, April 2, 2009)

Mass of CO2e in pipeline that must be purged:

Methane (CH4) mass = 4,267,000 / 379 scf/lb-mole of CH4
= 11,259 lb-mole of CH4
1 lb-mole of CH4 = 16 lb
Therefore,
Methane (CH4) mass = 180,137 lb
or, 90 tons

GWP of CH4 = 21
Therefore,
Mass of CO2e = 1,890 tons CO2e
or, 1,716 metric tonnes CO2e

Mass of CO2e that would be formed if pipeline gas was combusted downstream:

GHGs combustion = 90 tons CH4 x 44 moles CO2/ 16 moles CH4
= 247.5 tons CO2e
or, 225 metric tonnes CO2e

Net increase in GHG emissions due to purging over combusting downstream:

Increase in GHGs = 1,716 - 225 [metric tonnes CO2e]
Increase in GHGs = 1,491 metric tonnes CO2e

scf = standard cubic feet
CO2e = carbon dioxide equivalents

Biological Resources Assessment

Biological Resources Assessment for the Natural Gas Pipeline Relocation in Yolo County SMUD Cogeneration Pipeline Project (Docket No. 92-AFC-2P)

Burleson Consulting, Inc. (Burleson) has conducted a biological resource assessment to support the planning and design of the proposed Yolo County Natural Gas Pipeline Relocation. The proposed project area is located in Yolo County, California north of the community of Davis. The proposed project is generally located west of CR 102 and north of County Road (CR) 29. Additionally, the proposed project is located in Section 27, Township 9 North, and Range 2 East of the Davis U.S. Geological Survey topographic quadrangle map (Latitude 38.5898°N; Longitude 121.7322°W; UTM 4272021 Northing; and UTM 610411 Easting).

Project Description

The Sacramento Municipal Utility District (SMUD proposes to relocate an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A). The pipeline is near the intersection of CR 29 and CR 102, in Yolo County. The purpose of the pipeline relocation is to restore it to the original standards with respect to pipeline operating pressure. SMUD's construction standards and SMUD's Integrity Management Program, effective December 17, 2004, specify additional pipeline wall thickness for reinforcement under all road crossings. After Line 700A was installed in 1995, CR 29 was realigned in 1996, thereby crossing Line 700A in an area of unreinforced wall thickness. Line 700A will be relocated from existing pipeline Station 790+00 to approximately Station 791+50. Attachment A, Figure 1 shows the project location and the regional setting for the pipeline. Attachment A, Figure 2 shows the locations of both the existing and the proposed gas pipeline alignments.

The potential biological impacts of relocating the gas pipeline were analyzed by reviewing existing documents and performing new surveys for confirmation. Existing documents that were reviewed include the existing 1994 Commission Decision, 1993 SMUD Cogeneration Pipeline Project Biological Resource Mitigation and Monitoring Plan, and various supporting documents to the Gas Pipeline project. Supplemental field surveys were performed over the proposed project area to confirm the location and extent of sensitive biological resources and nesting raptors. Trees and potential nest sites out to 0.5 mile from construction were surveyed for Swainson's hawk activity. The resulting analysis prepared by Burleson indicates that the existing conditions for the pipeline are adequate to protect biological resources during project construction and operation.

Summary of the Commission Decision

The 1994 Commission Decision analyzed the proposed facility to determine whether it could be constructed and operated in a manner that protects biological resources, and whether the project would have a significant impact on these resources. The decision described surveys and research by Woodward-Clyde Consultants, over a 1,000-foot wide survey corridor. The environment was described as largely converted to

agriculture and urbanization with the development of irrigation and flood-control structures along streams and rivers. Development has reduced natural habitats to pockets of soils, freshwater marsh, riparian woodlands, and vernal pools.

The decision identified temporary surface activities associated with construction, and potential disturbances of fairy shrimp, dwarf downingia, alkali milkvetch, valley oak tree, Swainson's hawk and burrowing owl, giant garter snake, and valley elderberry longhorn beetle.

Based on the evidence, the Commission made findings that (1) construction poses a slight risk of potential impacts to several state-listed and one federal-listed species; (2) the proposed mitigation measures would likely ensure adequate supervision and adequate program to increase employee awareness of sensitive biological resources; (3) construction and operation are not likely to have significant negative impact on biological resources; and (4) the project is likely to comply with all laws and regulations.

Four Conditions of Certification were applied to the project, paraphrased as follows:

BIO-1: CEC will approve a designated biologist for the project.

BIO-2: The project owner will implement an Employee Environmental Awareness Program.

BIO-3: The project owner will implement the approved Biological Resources Mitigation and Monitoring Plan for this project.

BIO-4: If required by the California Department of Fish and Game (CDFG), the owner will enter into an Endangered Species Memorandum of Understanding per Section 2081 of the California Endangered Species Act.

Environmental Setting

The study area is located in the Sacramento Valley, between Davis and Woodland. The topography of this region is nearly level with an elevation of about 36 feet above mean sea level (msl). The climate is characterized as Mediterranean with cool, wet winters and hot, dry summers. Precipitation is on average 17.5 inches annually, most of which occurs as rain between November 1 and April 30 (Western Regional Climate Center, 2009). Air temperature ranges between an average January low of 37 degrees fahrenheit (^{o} F) and an average July high of 94^{o} F. The year round average high is about 75^{o}F and the year-round average annual low is 46^{o} F. The Soil Survey of Yolo County, California (U.S. Department of Agriculture [USDA], 2009) identifies and describes Pescadero silty clay, saline alkali soil within the project area. The Pescadero series consists of poorly drained silty clays in basins.

The proposed project is generally located west of CR 102 and north of the CR 29. The proposed gas pipeline relocation would traverses through an abandoned portion of CR 29, ruderal nonnative grassland, and a roadside ditch.

Analysis Methodology

Prior to conducting the field assessment, the following information sources were reviewed:

- Davis, California United States Geological Survey (USGS) quadrangle.
- California CDFG California Natural Diversity Data Base (CNDDB) records for the Davis, California USGS quadrangle and the surrounding eight quadrangles (Clarksburg, Dixon, Grays Bend, Merritt, Sacramento West, Saxon, Taylor Monument, and Woodland) (see Attachment B).
- U.S. Fish and Wildlife Service (USFWS) list of endangered and threatened species that may occur in or be affected by projects in the Davis, California USGS quadrangle (see Attachment B).
- California Native Plant Society (CNPS) list of Rare and Endangered Plants records for Davis, California USGS quadrangle (see Attachment B).

Field assessments of the study area were conducted by Burleson biologists Ammon Rice on March 19 and April 5, 2009, and Ed Whisler on April 7, 2009. The study area was surveyed by walking pedestrian transects to assess habitat types, evaluating the potential for the occurrence of special-status species, determining the presence or absence of waters of the United States including wetlands, and determining presence or absence of protected trees. Photographs taken during the site visits are presented in Attachment C. Lists of vegetation and wildlife observed during the site visits are presented in Attachment D.

Prior to visiting the field, a list of the special-status species with the potential to occur in the region was developed and used as a target list for rare plants and wildlife. During the field visits, wildlife observations and an inventory of existing plant species was recorded.

The field visit also included a survey for nesting birds of prey (raptors) in suitable habitat within 0.5 mile of the alignment. The biologist walked the ruderal grassland areas along CR 29, and used binoculars to observe birds around the adjacent agricultural fields. After watching and listening, the biologist searched a stand of trees about 0.28 mile west of the proposed project area with binoculars to locate stick nests. The raptor survey included a search for ground squirrel burrows that could function as burrowing owl nests. Incidental observations of wildlife species made during the field assessment were recorded.

Analysis Results

Vegetation Communities

The vegetation community within the proposed project area is comprised of ruderal nonnative grassland. The dominant grasses and other herbaceous vegetation include ripgut brome (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), wildoat (*Avena fatua*), fiddleneck (*Amsinckia menziesii* var. *intermedia*), Mediterranian barley (*Hordeum marinum*), cut-leaf filaree (*Erodium cicutarium*), miniature lupine (*Lupinus bicolor*), black mustard (*Brassica nigra*), yellow star-thistle (*Centaurea solstitialis*), wavyleaf soap plant (*Chlorogalum pomeridianum*), and milk thistle (*Silybum marianum*).

A roadside ditch (see the "waters" discussion below) parallels the south side of the abandoned and rerouted portions of CR 29, with upland grasses present outside of the

ditch. The bottom of the ditch consists of Pescadero silty clay soils and was void of vegetation.

CNDDB Query Results

According to California Natural Diversity Database (California Natural Diversity Database [CNDDB] 2009) query results, there are reported occurrences of 17 special-status plant and wildlife species within 5 miles of the study area (Figure 3): alkali milk-vetch (*Astragalus tener* var. *tener*), heartscale (*Atriplex cordulata*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), palmate-bracted bird's-beak (*Cordylanthus palmatus*), Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), vernal pool tadpole shrimp (*Lepidurus packardi*), California linderiella (*Linderiella occidentalis*), California tiger salamander (*Ambystoma californiense*), giant garter snake (Thamnophis gigas), western pond turtle (Emys [=Clemmys] marmorata), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), western snowy plover (*Charadrius alexandrinus nivosus*), white-tailed kite (*Elanus leucurus*), and silver-haired bat (*Lasionycteris noctivagans*). A spatial query of the CNDDB was conducted to produce a list of special-status species with known occurrences within 5 miles of the proposed project (Attachment A, Figure 3).

Special-Status Species

For the purposes of this assessment, "special-status" is defined to include those species that are:

- Listed as endangered or threatened under the Federal Endangered Species Act (or formally proposed, or candidates, for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or candidates for listing);
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as species of special concern by the CDFG;
- Plants or animals that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA);
- Plants listed as rare under the California Native Plant Protection Act; or
- Plants considered by California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B and 2, see Attachment B).

A list of regionally occurring special-status plant and wildlife species was compiled based on a review of pertinent literature, the results of the field assessments, the results of a CNDDB query of all reported occurrences of special-status species within the Davis, California USGS quadrangle and the surrounding eight quadrangles, a query of the CNPS Inventory of Rare and Endangered Plants database (Attachment B: CNPS, 2009)

for the Davis, California USGS quadrangle, and a species list obtained from the USFWS (Attachment B: USFWS, 2009). Habitat requirements for each special-status species were assessed and compared to the habitats occurring within the study area (Attachment E, Table E-1).

Based on the habitat requirements review and the field assessment results, the study area or the surrounding area (i.e., for raptors) provides suitable habitat for eleven (11) special-status wildlife species. These species include alkali milk-vetch (*Astragalus tener* var. *tener*), heartscale (*Atriplex cordulata*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), palmate-bracted bird's-beak (*Cordylanthus palmatus*), Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*).

Alkali milk-vetch, Heartscale, Brittlescale, San Joaquin spearscale, Palmate-bracted bird's-beak, and Heckard's pepper-grass

Alkali milk-vetch blooms between March and June and occurs in playas, valley and foothill grassland, and vernal pools with alkaline soils at elevations up to about 200 feet above mean sea level (msl). A population of alkali milk-vetch has been documented approximately 0.25 mile northwest of the proposed project site along Willow Slough. This population would not be affected and no special-status plant species were observed during the site surveys.

Heartscale blooms from April to October and occurs in Chenopod scrub, meadows and seeps, and valley and foothill grassland with alkaline soils up to an elevation of about 1,230 feet above msl. Brittlescale blooms from April to October and occurs in Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools with alkaline soils up to an elevation of about 1,050 feet above msl. San Joaquin spearscale blooms from April to October and occurs in Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland with alkaline soils up to an elevation of about 2,740 feet above msl. Palmate-bracted bird's-beak blooms from May to October and occurs in Chenopod scrub and valley and foothill grassland with alkaline soils up to an elevation of about 500 feet above msl. Heckard's pepper-grass blooms March to May and occurs in valley and foothill grassland with alkaline soils up to an elevation of about 650 feet above msl.

The high level of transmogrification (altered land use due to development) has removed most of the native landscape from within the study area decreasing the likelihood that the plants occur there. The species were not observed during the site survey. Several other rare plants occur regionally. No special-status plant species were observed.

Burrowing owl

The burrowing owl inhabits open, dry grasslands and deserts, as well as open stages of pinyon-juniper and ponderosa pine. The nesting season is between February 1 and August 31. Burrowing owls typically nest in abandoned rodent burrows, particularly those of California ground squirrels, which they modify each year. Burrowing owls forage in open grassland areas adjacent to nest sites. The species has also been documented in open areas near human habitation, especially airports and golf courses.

The Central Valley and surrounding foothill regions of California provide year-round habitat for the burrowing owl.

A pair of burrowing owls was observed along the north embankment of CR 28H, at least 1,100 feet east of CR 102. The study area provides marginally suitable grassland habitat adjacent to the agricultural fields. No burrowing owls or signs of them were observed within 500 feet of the proposed project site.

Swainson's hawk

Swainson's hawks require large areas of foraging habitat, preferably grassland or pasture habitats. Preferred prey items are voles (*Microtus* sp.), gophers (e.g., *Thomomys bottae*), birds, and insects such as grasshoppers. They have also adapted to foraging in some cropland habitats such as alfalfa, grain crops, tomatoes, beets, and other row crops. Crops such as cotton, corn, rice, orchards, and vineyards are not suitable since they either lack suitable prey or the prey is unavailable to the Swainson's hawk because of the crops structure. In the Central Valley, Swainson's hawk is generally associated with riparian habitat for nesting sites.

A pair of Swainson's Hawks was observed performing courtships flights around the farmhouse approximately 0.28 mile west of the project site along CR 29. They made several low flights through the trees at the farmhouse. They did not show interest in any particular tree; however, they are likely to nest in the stick nests observed within the trees surrounding the farmhouse. The Swainson's hawk nesting habitat is more than 0.25 mile from the proposed project site and within an urban environment. Therefore, the proposed project is not likely to affect the Swainson's hawk.

Loggerhead shrike

The loggerhead shrike prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches located in open-canopied valley foothill hardwood, valley foothill hardwood conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Loggerhead shrikes skewer their prey to thorns or barbs on barbed-wire fences. The purpose of this trait may be to help kill the prey or to cache the food for later consumption. Loggerhead shrikes are found in lowlands and foothills throughout California. One loggerhead shrike was observed during the field surveys approximately 0.35 mile east of the proposed project site, but its nest was not observed.

White-tailed kite

The white-tailed kite can be found in association with the herbaceous and open stages of a variety of habitat types, including open grasslands, meadows, emergent wetlands, and agricultural lands. Nests are constructed near the top of dense oaks, willows, or other tree stands located adjacent to foraging areas. The species forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. White-tailed kite are seldom observed more than 0.5 mile from an active nest during the breeding season. The white-tailed kite is found year-round in both the coastal zones and lowlands of the Central Valley in California. No white-tailed kites were observed during field surveys.

Other raptors (red-tailed hawk, northern harrier, Cooper's hawk, sharp-shinned hawk)

The study area could support other raptor species, including those listed here and others that do not qualify as special-status species. All raptor species, including relatively common species (e.g., red-tailed hawks) and their nests are protected from take under California Fish and Game Code Section 3503.5. The raptor survey conducted within 0.5 mile of the site included a stand search in which all trees were searched for stick nests. An occupied raptor nest was observed in a radio tower approximately 0.4 mile east of the proposed project site and south of CR 29. Red-tailed hawks often build their nests in lattice towers; however, the identity of the hawk could not be determined because it was staying very low in the nest to avoid the wind. A northern harrier was observed foraging within and adjacent to the proposed project site; however, no nests were observed.

Waters of the United States and Wetlands Habitats

A roadside ditch was observed and documented south of and adjacent to the abandoned portion of CR 29. The ditch habitat appears to catch surface water runoff from adjacent uplands and roads during winter storm events. The ditch features are scoured with very little vegetation growing within the channel. The dominant grasses and forbs along the banks and upland areas include ripgut brome (*Bromus diandrus* – UPL[1]), Italian ryegrass (*Lolium multiflorum* – FAC), wildoat (*Avena fatua* – UPL), fiddleneck (*Amsinckia menziesii* var. *intermedia* – UPL), Mediterranian barley (*Hordeum marinum* – FAC), cut-leaf filaree (*Erodium cicutarium* – UPL), miniature lupine (*Lupinus bicolor* – UPL), black mustard (*Brassica nigra* – UPL), yellow star-thistle (*Centaurea solstitialis* – UPL), and milk thistle (*Silybum marianum* – UPL).

The roadside ditch does not connect to any other wetland features. The feature is isolated with a 3 to 5 percent grade to the east. The soils observed in the roadside ditch are clay with a matrix color of 5GY 7/3. A soil pit was dug to a depth of 14 inches and the soil was saturated. Surface water was present in the lowest spot of the ditch during the April 5 survey.

On June 5, 2007 the U.S. Environmental Protection Agency (EPA) and the USACE issued a memorandum providing guidance on interpreting the U.S. Supreme Court "Rapanos Decision" (June 19, 2006 *Rapanos et ux., et al v. U.S. Army Corps of Engineers*). This guidance states that ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not waters of the U.S. (Grumbles and Woodley, 2007). Therefore, it is determined that the features documented by Burleson do not currently qualify as waters of the U.S.

[1] FAC = Facultative Plants estimated probability of occurring in wetland 33 percent to 67 percent
UPL = Obligate Upland Plants estimated probability of occurring in wetland <1 percent

Protected Trees

Yolo County is currently undergoing a comprehensive General Plan update. This process will include a review of existing ordinances and policies and will discuss policies and actions related to oak woodland conservation and management. However, no trees were observed within the proposed project site or within 500 feet.

Biological Resources Conclusions and Recommendations

Based on information in the original Commission Decision, search of the CNDDB database and supplemental confirmatory fieldwork, the following conclusions have been made:

- The habitat in the project area is dominated by ruderal nonnative grassland and surrounded by cropland. There are no intact rare habitats in the vicinity.
- The project would cross one roadside drainage ditch that is not considered to be jurisdictional.
- A population of alkali milk-vetch was documented during the 1993 surveys of the SMUD Cogeneration Pipeline Project along. The population was documented on the west side of Willow Slough, approximately 0.25 mile northwest of the proposed project site. No special-status plant species were observed during the site surveys.
- A pair of Swainson's hawks was observed performing courtships flights above the farmhouse approximately 0.28 mile west of the proposed construction area and are likely nesting there. The Swainson's hawk nesting habitat is more than 0.25 mile from the proposed project site and within an urban environment. Therefore, the proposed project is not likely to affect the Swainson's hawk.
- A pair of burrowing owls was observed along the north embankment of CR 28H, at least 1,100 feet east of CR 102. No burrowing owls or signs of them were observed within 500 feet of the proposed project site.

References

California Department of Fish and Game. 2009. California Natural Diversity Database, Rare Find Version 3.0.5. Last updated February 2, 2009. Available online: http://www.dfg.ca.gov/bdb/html/cnddb.html. Accessed February 16, 2009.

California Native Plant Society (CNPS). 2009. Inventory of Rare and Endangered Plants (online edition, v7-09a). California Native Plant Society. Sacramento, CA. http://www.cnps.org/inventory. Accessed February 16, 2009.

Grumbles and Woodley. 2007. Clean Water Act jurisdiction following the U.S. Supreme Court decision in Rapanos v. United States and Carabell v. United States. Joint memorandum issued by Environmental Protection Agency and U. S. Army Corps of Engineers on June 5, 2007.

USDA Natural Resource Conservation Survey. 2009. Custom Soil Resource Report for Yolo County, California. http://soils.usda.gov/survey/WSS_update.html. Accessed March 16, 2009.

U.S. Fish and Wildlife Service (USFWS). 2009. Sacramento office, Species List Database. Last updated January 29, 2009.

Western Region Climate Center. 2009. Period of Record Monthly Climate Summary for the Davis 1 WSW, California (042294) station. http://www.wrcc.dri.edu. Accessed February 16.

ATTACHMENT A

Figures

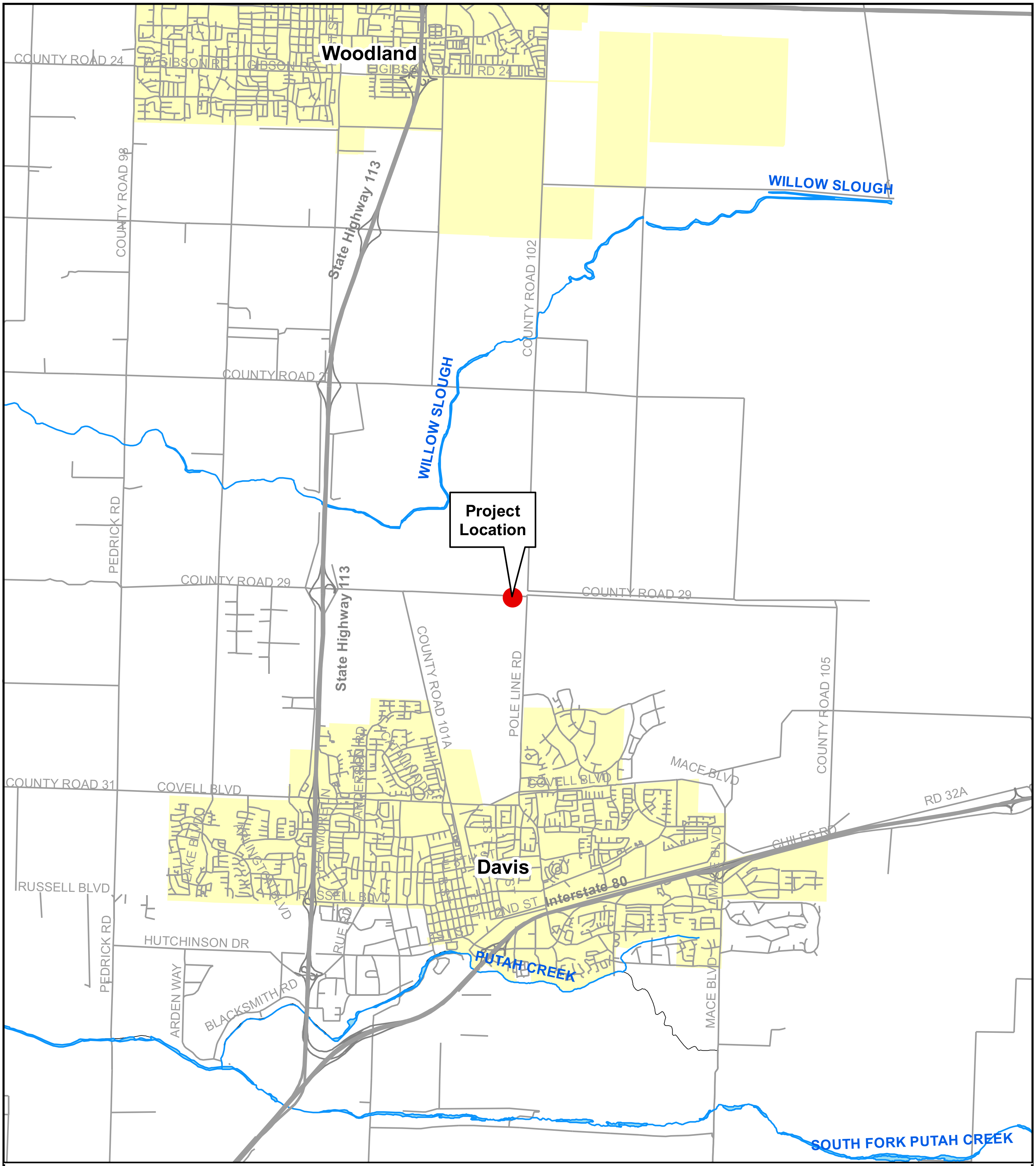


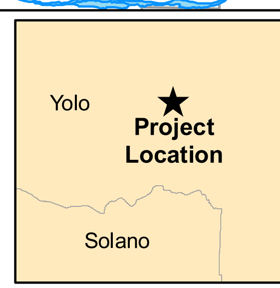
Figure B-1
Natural Gas Pipeline Relocation in Yolo County
Project Location

Legend

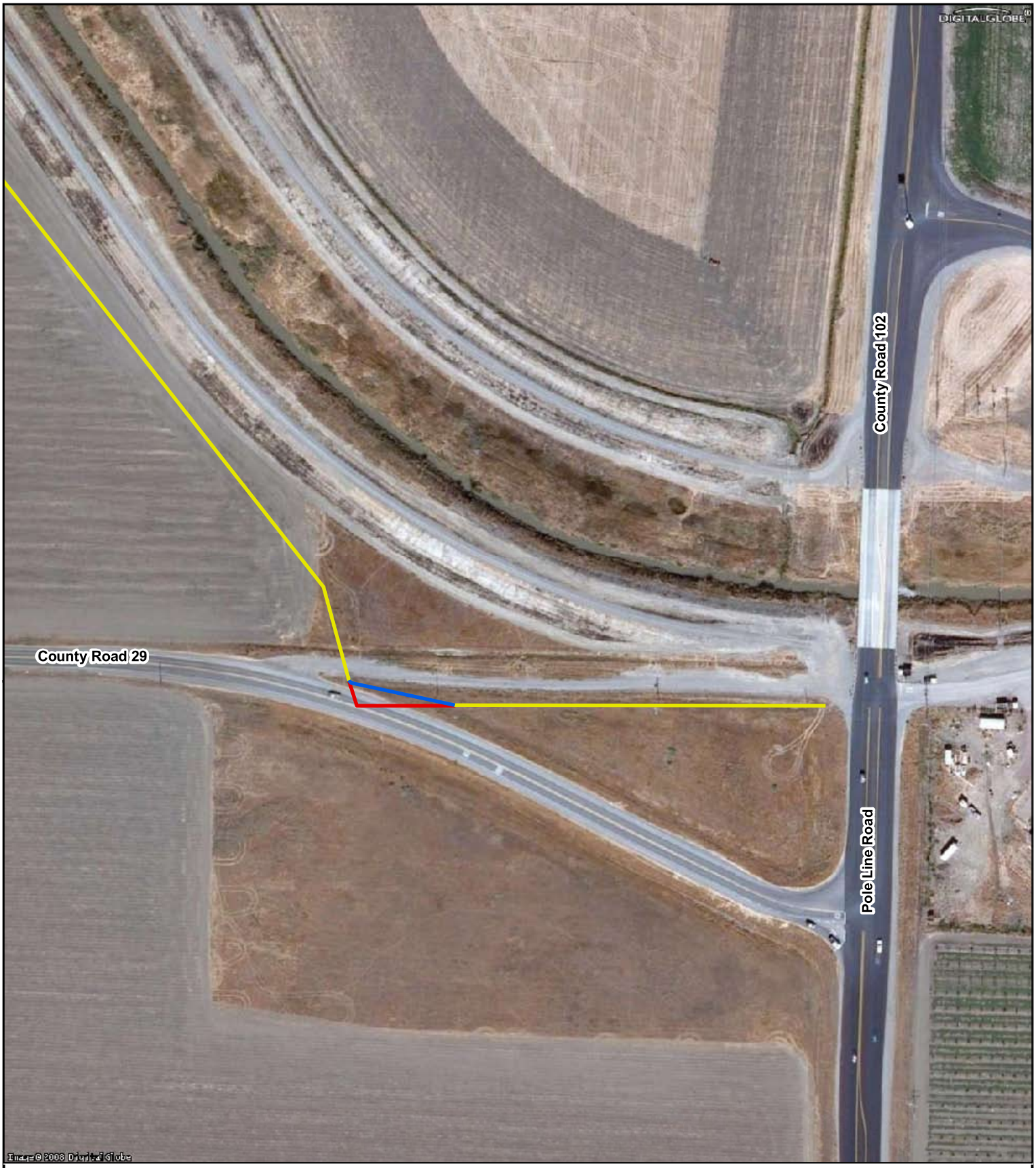
- Project Location
- Roads
- Rivers and Streams
- City Boundaries

N

0 1 2 3
Miles



Sacramento Municipal Utility District
Sacramento County, California



Legend

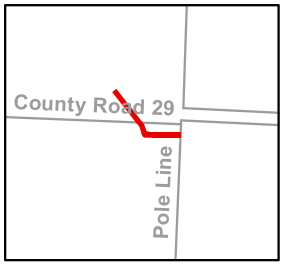
- Existing Pipeline
- Proposed Relocated Pipeline
- Proposed Abandoned Pipeline

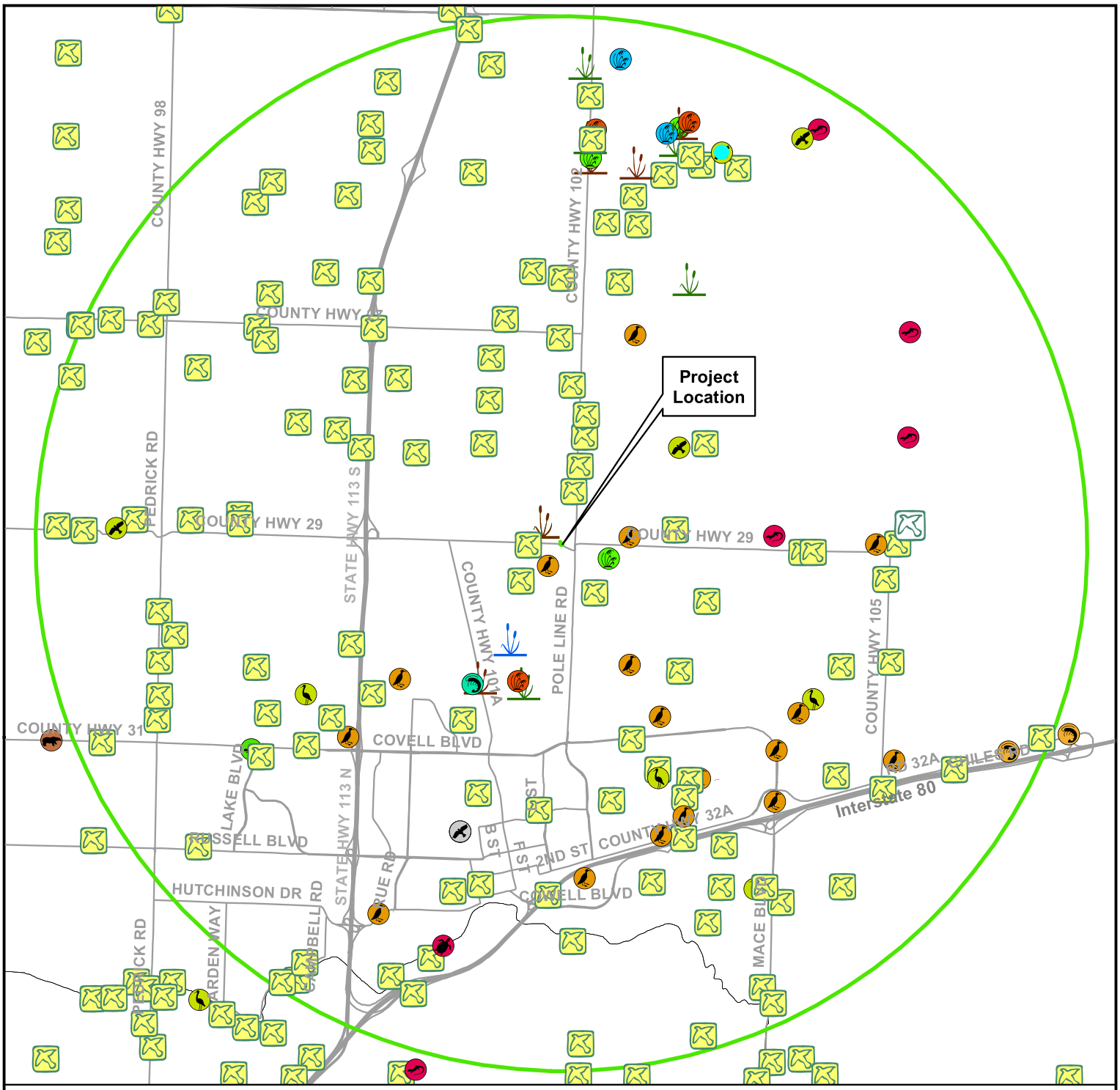
Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008

Figure B-2
Natural Gas Pipeline Relocation in Yolo County
Proposed Alignment

N

0 130 260 390
Feet





Legend

- Project Boundary
- 5 Mile Project Buffer
- Roads
- American badger
- Antioch multilid wasp
- California linderiella
- California tiger salamander
- Heckard's pepper-grass
- Sacramento Valley tiger beetle
- San Joaquin spearscale
- alkali milk-vetch
- brittlescale
- burrowing owl
- giant garter snake
- heartscale
- palmate-bracted bird's-beak
- silver-haired bat
- tricolored blackbird
- vernal pool tadpole shrimp
- western pond turtle
- western snowy plover
- white-tailed kite
- Swainson's hawk

Figure B-3
Natural Gas Pipeline Relocation in Yolo County
Special Status Species

N

0 1 2 3
Miles

Sacramento Municipal Utility District
Sacramento County, California
Data Source: CNDDB provided by CADFG 3-5-2009

ATTACHMENT B

Database Queries

California Department of Fish and Game
Natural Diversity Database
CNDDB Wide Tabular Report
Davis and 8 Surrounding Quads

Name (Scientific/Common)	CNDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
Actinemys marmorata western pond turtle	G3G4 S3	CDFG: SC	Fed: None Cal: None	355 S:1	0	0	0	0	0	1	0	1	1	0	0
Agelaius tricolor tricolored blackbird	G2G3 S2	CDFG: SC	Fed: None Cal: None	424 S:9	0	0	1	0	3	5	4	5	6	1	2
Ambystoma californiense California tiger salamander	G2G3 S2S3	CDFG: SC	Fed: Threatened Cal: None	1001 S:2	0	0	0	0	1	1	1	1	1	0	1
Ammodramus savannarum grasshopper sparrow	G5 S2	CDFG: SC	Fed: None Cal: None	16 S:1	0	0	1	0	0	0	0	1	1	0	0
Antrozous pallidus pallid bat	G5 S3	CDFG: SC	Fed: None Cal: None	398 S:2	0	0	0	0	0	2	2	0	2	0	0
Archoplites interruptus Sacramento perch	G3 S1	CDFG: SC	Fed: None Cal: None	5 S:1	0	0	0	0	0	1	1	0	1	0	0
Ardea alba great egret	G5 S4	CDFG:	Fed: None Cal: None	34 S:1	1	0	0	0	0	0	1	0	1	0	0
Astragalus tener var. ferrisiae Ferris' milk-vetch	G1T1 S1.1	CNPS: 1B.1	Fed: None Cal: None	15 S:2	0	0	1	0	1	0	1	1	1	1	0
Astragalus tener var. tener alkali milk-vetch	G1T1 S1.1	CNPS: 1B.2	Fed: None Cal: None	66 S:13	1	4	2	1	5	0	4	9	8	4	1
Athene cunicularia burrowing owl	G4 S2	CDFG: SC	Fed: None Cal: None	1182 S:75	2	12	30	5	10	16	16	59	65	7	3
Atriplex cordulata heartscale	G2? S2.2?	CNPS: 1B.2	Fed: None Cal: None	58 S:1	0	0	0	0	1	0	1	0	0	0	1
Atriplex depressa brittlescale	G2Q S2.2	CNPS: 1B.2	Fed: None Cal: None	52 S:4	0	1	0	1	0	2	1	3	4	0	0
Atriplex joaquiniana San Joaquin spearscale	G2 S2.1	CNPS: 1B.2	Fed: None Cal: None	91 S:8	0	1	4	1	0	2	1	7	8	0	0
Branchinecta conservatio Conservancy fairy shrimp	G1 S1	CDFG:	Fed: Endangered Cal: None	29 S:1	1	0	0	0	0	0	0	1	1	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S2S3	CDFG:	Fed: Threatened Cal: None	595 S:7	0	2	3	0	0	2	0	7	7	0	0

Name (Scientific/Common)	CNDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
Branchinecta mesovallensis midvalley fairy shrimp	G2 S2	CDFG:	Fed: None Cal: None	99 S:2	0	1	1	0	0	0	0	2	2	0	0
Buteo swainsoni Swainson's hawk	G5 S2	CDFG:	Fed: None Cal: Threatened	1677 S:488	82	163	60	9	13	161	33	455	472	10	6
Charadrius alexandrinus nivosus western snowy plover	G4T3 S2	CDFG: SC	Fed: Threatened Cal: None	116 S:2	0	0	0	0	0	2	2	0	2	0	0
Charadrius montanus mountain plover	G2 S2?	CDFG: SC	Fed: None Cal: None	40 S:4	1	1	1	0	0	1	1	3	4	0	0
Cicindela hirticollis abrupta Sacramento Valley tiger beetle	G5TH SH	CDFG:	Fed: None Cal: None	5 S:1	0	0	0	0	1	0	1	0	0	0	1
Coccyzus americanus occidentalis western yellow-billed cuckoo	G5T3Q S1	CDFG:	Fed: Candidate Cal: Endangered	112 S:1	0	0	0	0	1	0	1	0	0	0	1
Cordylanthus palmatus palmate-bracted bird's-beak	G1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: Endangered	24 S:3	0	0	1	0	1	1	1	2	2	0	1
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2 S2	CDFG:	Fed: Threatened Cal: None	201 S:9	0	0	3	1	0	5	5	4	9	0	0
Egretta thula snowy egret	G5 S4	CDFG:	Fed: None Cal: None	15 S:1	1	0	0	0	0	0	1	0	1	0	0
Elanus leucurus white-tailed kite	G5 S3	CDFG:	Fed: None Cal: None	111 S:9	0	6	0	2	1	0	0	9	8	1	0
Elderberry Savanna	G2 S2.1		Fed: None Cal: None	4 S:1	0	0	1	0	0	0	1	0	1	0	0
Fritillaria pluriflora adobe-lily	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	97 S:1	0	0	0	0	0	1	1	0	1	0	0
Great Valley Cottonwood Riparian Forest	G2 S2.1		Fed: None Cal: None	56 S:1	0	0	0	0	0	1	1	0	1	0	0
Hibiscus lasiocarpos woolly rose-mallow	G4 S2.2	CNPS: 2.2	Fed: None Cal: None	132 S:1	0	0	0	1	0	0	1	0	1	0	0
Juglans hindsii Northern California black walnut	G1 S1.1	CNPS: 1B.1	Fed: None Cal: None	5 S:1	0	0	0	0	1	0	1	0	0	0	1

Name (Scientific/Common)	CNDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
Lasionycteris noctivagans silver-haired bat	G5 S3S4	CDFG:	Fed: None Cal: None	138 S:2	0	0	0	0	0	2	1	1	2	0	0
Lasiurus cinereus hoary bat	G5 S4?	CDFG:	Fed: None Cal: None	235 S:3	0	0	0	0	0	3	0	3	3	0	0
Lepidium latipes var. heckardii Heckard's pepper-grass	G4T1 S1.2	CNPS: 1B.2	Fed: None Cal: None	11 S:5	2	0	2	0	0	1	1	4	5	0	0
Lepidurus packardi vernal pool tadpole shrimp	G3 S2S3	CDFG:	Fed: Endangered Cal: None	249 S:6	2	0	2	0	0	2	2	4	5	1	0
Linderiella occidentalis California linderiella	G3 S2S3	CDFG:	Fed: None Cal: None	367 S:4	0	1	0	3	0	0	0	4	4	0	0
Myrmosula pacifica Antioch multilid wasp	GH SH	CDFG:	Fed: None Cal: None	3 S:1	0	0	0	0	0	1	1	0	0	1	0
Navarretia leucocephala ssp. bakeri Baker's navarretia	G4T2 S2.1	CNPS: 1B.1	Fed: None Cal: None	45 S:1	1	0	0	0	0	0	0	1	1	0	0
Neostapfia colusana Colusa grass	G3 S3.1	CNPS: 1B.1	Fed: Threatened Cal: Endangered	61 S:2	0	2	0	0	0	0	0	2	2	0	0
Nycticorax nycticorax black-crowned night heron	G5 S3	CDFG:	Fed: None Cal: None	25 S:1	1	0	0	0	0	0	1	0	1	0	0
Plegadis chihi white-faced ibis	G5 S1	CDFG:	Fed: None Cal: None	19 S:1	0	1	0	0	0	0	1	0	1	0	0
Pogonichthys macrolepidotus Sacramento splittail	G2 S2	CDFG: SC	Fed: None Cal: None	15 S:1	0	1	0	0	0	0	0	1	1	0	0
Progne subis purple martin	G5 S3	CDFG: SC	Fed: None Cal: None	45 S:1	0	0	0	0	0	1	0	1	1	0	0
Taxidea taxus American badger	G5 S4	CDFG: SC	Fed: None Cal: None	413 S:4	0	0	0	0	0	4	3	1	4	0	0
Thamnophis gigas giant garter snake	G2G3 S2S3	CDFG:	Fed: Threatened Cal: Threatened	223 S:48	17	7	5	0	0	19	17	31	48	0	0
Tuctoria mucronata Crampton's tuctoria or Solano grass	G1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: Endangered	3 S:1	1	0	0	0	0	0	0	1	1	0	0

California Department of Fish and Game
Natural Diversity Database
CNDDB Wide Tabular Report
Davis and 8 Surrounding Quads

Name (Scientific/Common)	CNDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
Valley Oak Woodland	G3 S2.1		Fed: None Cal: None	91 S:1	0	0	0	0	0	1	1	0	1	0	0
Xanthocephalus xanthocephalus yellow-headed blackbird	G5 S3S4	CDFG: SC	Fed: None Cal: None	9 S:1	0	0	0	0	0	1	1	0	1	0	0

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

April 6, 2009

Document Number: 090406104214

Ammon Rice
Burleson Consulting, Inc.
950 Glenn Drive, Suite 135
Folsom, CA 95630

Subject: Species List for SMUD Natural Gas Pipeline Relocation in Yolo County

Dear: Mr. Rice

We are sending this official species list in response to your April 6, 2009 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be July 05, 2009.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division


TAKE PRIDE
IN AMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 090406104214

Database Last Updated: January 29, 2009

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta lynchi

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardi

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus

delta smelt (T)

Oncorhynchus mykiss

Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana aurora draytonii

California red-legged frog (T)

Reptiles

Thamnophis gigas

giant garter snake (T)

Birds

Charadrius alexandrinus nivosus

western snowy plover (T)

Plants

Neostapfia colusana

Critical habitat, Colusa grass (X)

Tuctoria mucronata

Critical habitat, Solano grass (=Crampton's tuctoria) (X)

Quads Containing Listed, Proposed or Candidate Species:

DAVIS (513C)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** proje within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by t list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist

and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environment documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that n result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together t avoid or minimize the impact on listed species and their habitat. Such consultation would resu in a biological opinion by the Service addressing the anticipated effect of the project on listed proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and a likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct a indirect impacts to listed species and compensates for project-related loss of habitat. You shou include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essenti to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may found in the Federal Register. The information is also reprinted in the Code of Federal

Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose th for listing as threatened or endangered. By considering these species early in your plannir process you may be able to avoid the problems that could develop if one of these candida was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defir by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, yo will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be July (2009.

Inventory of Rare and Endangered Plants

v7-09a 1-13-09

Status: search results - Wed, Apr. 8, 2009, 14:15 b

{QUADS_123} =~ m/513C|497A|497B|514D|514A|498A|513D|513A Search

Tip: Want to search by habitat? Try the **Checkbox and Preset** search page.[all tips and help.] [search history]

Your Quad Selection: Davis (513C) 3812156, Clarksburg (497A) 3812145, Saxon (497B) 3812146, Merritt (514D) 3812157, Woodland (514A) 3812167, Dixon (498A) 3812147, Sacramento West (513D) 3812155, Taylor Monument (513A) 3812165, Grays Bend (513B) 3812166

Hits 1 to 15 of 15

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	**Astragalus tener var. ferrisiae**	Ferris' milk-vetch	Fabaceae	List 1B.1
		1	**Astragalus tener var. tener**	alkali milk-vetch	Fabaceae	List 1B.2
		1	**Atriplex cordulata**	heartscale	Chenopodiaceae	List 1B.2
		1	**Atriplex depressa**	brittlescale	Chenopodiaceae	List 1B.2
		1	**Atriplex joaquiniana**	San Joaquin spearscale	Chenopodiaceae	List 1B.2
		1	**Cordylanthus palmatus**	palmate-bracted bird's-beak	Scrophulariaceae	List 1B.1
		1	**Fritillaria pluriflora**	adobe-lily	Liliaceae	List 1B.2
		1	**Hibiscus lasiocarpus**	woolly rose-mallow	Malvaceae	List 2.2
		1	**Juglans hindsii**	Northern California black walnut	Juglandaceae	List 1B.1
		1	**Lepidium latipes var. heckardii**	Heckard's pepper-grass	Brassicaceae	List 1B.2
		1	**Lessingia hololeuca**	woolly-headed lessingia	Asteraceae	List 3
		1	**Myosurus minimus ssp. apus**	little mousetail	Ranunculaceae	List 3.1
		1	**Navarretia leucocephala ssp. bakeri**	Baker's navarretia	Polemoniaceae	List 1B.1
		1	**Neostapfia colusana**	Colusa grass	Poaceae	List 1B.1

		1	**Tuctoria mucronata**	Crampton's tuctoria or Solano grass	Poaceae	List 1B.1

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.

ATTACHMENT C

Photo Log

Attachment C
Natural Gas Pipeline Relocation in Yolo County
March 19 and April 5, 2009

Viewing Direction	Photo Description	Photo
←	**1.** Abandoned portion of CR 29 and the proposed project site south of the abandoned road; facing west.	
→	**2.** Proposed project site in between abandoned portion of CR 29 and CR 29; facing east.	

Attachment C
Natural Gas Pipeline Relocation in Yolo County
March 19 and April 5, 2009

Viewing Direction	Photo Description	Photo
➔	**3.** Abandoned portion of CR 29 and the proposed project site south of the abandoned road; facing east.	
➔	**4.** Ruderal nonnative grassland within the proposed project site and roadside ditch south of abandoned portion of CR 29; facing west.	

Attachment C
Natural Gas Pipeline Relocation in Yolo County
March 19 and April 5, 2009

Viewing Direction	Photo Description	Photo
➔	**5.** West end of the roadside ditch within the proposed project site south of abandoned portion of CR 29; facing east.	
➔	**6.** Ruderal nonnative grassland and agricultural fields south of CR 29 and south of the proposed project site; facing south.	

Attachment C
Natural Gas Pipeline Relocation in Yolo County
March 19 and April 5, 2009

Viewing Direction	Photo Description	Photo
←	**7.** Ruderal nonnative grassland, agricultural fields, and a farmhouse 0.28 mile west of the proposed project site and south of CR 29; facing west.	
↖	**8.** Agricultural fields north of the proposed project site; facing northwest.	

Attachment C
Natural Gas Pipeline Relocation in Yolo County
March 19 and April 5, 2009

Viewing Direction	Photo Description	Photo
↑	**9.** Willow Slough located 270 feet northeast of the proposed project site; facing north.	
↗	**10.** Willow Slough flowing under CR 102 northeast of the proposed project site; facing northeast.	

ATTACHMENT D

Incidental Plant and Wildlife Observations

Plant Species Observed at the SMUD Natural Gas Pipeline Relocation in Yolo County

Field Visit Dates: March 19 and April 5, 2009

Scientific Name	Common Name	Family
Roadside/Nonnative annual grassland		
Amsinckia menziesii var. *intermedia*	fiddleneck	Boraginaceae
Avena fatua	wildoat	Poaceae
Brassica nigra	black mustard	Brassicaceae
Bromus diandrus	ripgut brome	Poaceae
Centaurea solstitialis	yellow star-thistle	Asteraceae
Chlorogalum pomeridianum	Wavyleaf soap plant	Liliaceae
Erodium cicutarium	cut-leaf filaree	Geraniaceae
Hordeum marinum	Mediterranian barley	Poaceae
Lolium multiflorum	Italian ryegrass	Poaceae
Lupinus bicolor	miniature lupine	Fabaceae
Silybum marianum	milk thistle	Astaraceae

Wildlife Species Observed at the SMUD Natural Gas Pipeline Relocation in Yolo County

Field Visit Dates: March 19, April 5, and 7, 2009

Scientific Name	Common Name	Observation
Athene cunicularia	burrowing owl	visual
Agelaius phoeniceus	red-winged blackbird	visual
Buteo jamaicensis	red-tailed hawk	visual
Buteo swainsoni	Swainson's hawk	visual
Carpodacus mexicanus	house finch	visual
Circus cyaneus	northern harrier	visual
Columbia livia	rock dove	visual
Euphagus cyanocephalus	Brewer's blackbird	visual
Lanius ludovicianus	loggerhead shrike	visual

ATTACHMENT E

Summary of Special-Status Species Review

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Plants			
Astragalus tener var. *ferrisiae* Ferris' milk-vetch	—/—/1B	Annual herb that blooms between April and May and occurs in meadows and seeps and valley and foothill grassland at elevations up to about 250 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no intact suitable habitat present in the proposed project site.
Astragalus tener var. *tener* Alkali milk-vetch	—/—/1B	Annual herb that blooms between March and June and occurs in playas, valley and foothill grassland, vernal pools with alkaline soils at elevations up to about 200 feet above msl.	Low. The nearest CNDDB occurrence is documented about 0.25 mile north of the proposed project site. No special-status plant species were observed during the site surveys.
Atriplex cordulata Heartscale	—/—/1B	Annual herb that blooms April to October and occurs in Chenopod scrub, meadows and seeps, valley and foothill grassland with alkaline soils up to an elevation of about 1,230 feet above msl.	Low. The nearest CNDDB occurrence is documented about 1.1 miles south of the proposed project site. No special-status plant species were observed during the site surveys.
Atriplex depressa Brittlescale	—/—/1B	Annual herb that blooms April to October and occurs in Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools with alkaline soils up to an elevation of about 1,050 feet above msl.	Low. The nearest CNDDB occurrence is documented about 1.4 miles south of the proposed project site. No special-status plant species were observed during the site surveys.
Atriplex joaquiniana San Joaquin spearscale	—/—/1B	Annual herb that blooms April to October and occurs in Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland with alkaline soils up to an elevation of about 2,740 feet above msl.	Low. The nearest CNDDB occurrence is documented about 1.4 miles south of the proposed project site. No special-status plant species were observed during the site surveys.
Cordylanthus palmatus Palmate-bracted bird's-beak	E/E/1B	A hemiparasitic annual herb that blooms May to October and occurs in Chenopod scrub and valley and foothill grassland with alkaline soils up to an elevation of about 500 feet above msl.	Low. The nearest CNDDB occurrence is documented about 4 miles north of the proposed project site. No special-status plant species were observed during the site surveys.
Fritillaria pluriflora adobe-lily	—/—/1B	Bulbiferous herb that blooms between February and April and occurs in chaparral, cismontane woodland, and valley and foothill grassland often adobe at elevations between 200 and 2,300 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no intact suitable habitat (chaparral, cismontane woodland, and valley and foothill grassland) present in the proposed project site.
Hibiscus lasiocarpos Woolly rose-mallow	—/—/2	An emergent rhizomatous herb that blooms between June and September and occurs in marshes and swamps up to an elevation of about 400 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no suitable habitat (marshes and swamps) present in the proposed project site.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Juglans hindsii Northern California black walnut	—/—/1B	A deciduous tree that blooms between April and May and occurs in riparian forests and woodlands up to an elevation of about 1,500 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No trees were observed within 500 feet of the proposed project site.
Lepidium latipes var. *heckardii* Heckard's pepper-grass	—/—/1B	Annual herb that blooms March to May and occurs in valley and foothill grassland with alkaline soils up to an elevation of about 650 feet above msl.	Low. The nearest CNDDB occurrence is documented about 0.5 mile east of the proposed project site. No special-status plant species were observed during the site surveys.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	—/—/1B	Annual herb that blooms between April and July and occurs in cismontane woodlands, lower montane coniferous forests, meadows and seeps, valley and foothill grassland, and vernal pools with mesic soils up to an elevation of about 5,700 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no intact suitable habitat present in the proposed project site.
Neostapfia colusana Colusa grass Critical habitat	—/—/1B	Annual herb that blooms between May and August and occurs in large adobe vernal pools up to an elevation of about 650 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no suitable habitat (vernal pools) present in the proposed project site. The proposed project site is outside of designated critical habitat.
Tuctoria mucronata Crampton's tuctoria or Solano grass Critical habitat	E/E/1B	Annual herb that blooms between April and August and occurs in valley and foothill grassland and vernal pools up to an elevation of about 30 feet above msl.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no suitable habitat (vernal pools) present in the proposed project site. The proposed project site is outside of designated critical habitat.
Invertebrates			
Branchinecta conservatio Conservancy fairy shrimp	E/—/—	Inhabit highly turbid water in vernal pools. Cysts hatch and shrimp become active when pools fill during the winter rainy season.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no suitable habitat (vernal pools and other seasonal ponded habitats) present in the proposed project site.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Branchinecta lynchi Vernal pool fairy shrimp	T/—/—	Local resident. Associated with ephemeral swales and vernal pools in grassland communities. Cysts hatch and shrimp become active when pools fill during the winter rainy season.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no suitable habitat (vernal pools and other seasonal ponded habitats) present in the proposed project site.
Branchinecta mesovallensis Midvalley fairy shrimp	—/SC/—	Endemic but distribution poorly understood. Associated with vernal pools, vernal swales, and other ephemeral water features. Habitat requirements similar to other local fairy shrimp species but tend to be in more shallow pools.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. There is no suitable habitat (vernal pools and other seasonal ponded habitats) present in the proposed project site.
Cicindela hirticollis abrupta Sacramento Valley tiger beetle	*	Believed to be extinct, this beetle was closely associated with a water bodies.	Not likely. This species is believed to be extinct, the CNDDB occurrence is more than 20 years old.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	T/—/—	Endemic with patchy distribution. Valley elderberry longhorn beetles are completely dependent on their host plant, the elderberry shrub. Adult active period is from March to June.	Not likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat (elderberry shrub) present within 500 feet of the proposed project site.
Lepidurus packardi Vernal pool tadpole shrimp Critical habitat	E/—/—	Local resident. Associated with a variety of artificial and natural vernal pools in grassland communities. Cysts hatch and shrimp become active when pools fill during the winter rainy season.	Not likely. One CNDDB occurrence documented 1.6 mile southwest of the proposed project site. There is no suitable habitat (vernal pools and other seasonal ponded habitats) present in the proposed project site. The proposed project site is outside of designated critical habitat.
Linderiella occidentalis California linderiella	—/SC/—	Local resident. Associated with vernal pools in grassland communities. These pools are often formed in rock depressions. Cysts hatch and shrimp become active when pools fill during the winter rainy season.	Not likely. One CNDDB occurrence documented 4.7 miles southeast of the proposed project site. There is no suitable habitat (vernal pools and other seasonal ponded habitats) present in the proposed project site.
Myrmosula pacifica Antioch multilid wasp	*	Unknown.	Not likely. Likely extirpated, last documented occurrence was in 1945.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Reptiles and Amphibians			
Actinemys marmorata Western pond turtle	—/SC/—	The only native freshwater turtle in the Pacific Coast states. Highly aquatic and associated with riparian habitat, including streams, rivers, sloughs, ponds, and artificial water bodies with deep pools, basking sites, and aquatic vegetation. Adults hibernate in the winter by burying themselves in muddy bottoms underwater or in upland soil and vegetative litter.	Not Likely. One CNDDB occurrence documented about 4 miles southwest of the proposed project site. No suitable habitat within the proposed project site.
Ambystoma californiense California tiger salamander	T/SC/—	Terrestrial salamander. Restricted to grasslands and low foothill regions with aquatic sites for breeding that may include valley needle grassland, valley wild rye grassland, non-native grassland and wildflower fields with vernal pools or other temporary ponds. Other habitats include valley-oak woodland.	Not Likely. One CNDDB occurrence documented about 3.75 miles southwest of the proposed project site. No suitable habitat within the proposed project site.
Rana aurora draytonii California red-legged frog	T/SC/—	Largest native frog in the Western United States. Requires dense, shrubby or emergent vegetation associated with deep still or slow-moving water. Breeds from November through March.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Thamnophis gigas Giant garter snake	T/T/—	Aquatic snake. Prefers freshwater marsh and low-gradient streams. Has adapted to drainage canals and irrigation ditches. Uses burrows and soil crevices in uplands during winter dormant period. Breeding period March through April.	Not Likely. The nearest CNDDB occurrence is documented about 2 miles east of the proposed project site. No suitable habitat within the proposed project site.
Birds			
Agelaius tricolor Tricolored blackbird	—/SC/—	Summer migrant to area. Found throughout the Central Valley, where it is associated with wetland areas with dense vegetation such as cattails, tule, and bulrush. Forage in grassland and agricultural fields. Nest in large colonies. Breeding season is April-July. However, has also been reported breeding in October and November.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Ammodramus savannarum Grasshopper sparrow	—/SC/—	An uncommon and local summer resident and breeder in foothills and lowlands west of the Cascade-Sierra Nevada crest. Occurs in open grassy and weedy meadows, pastures, and plains. Builds nest of grasses and forbs in a slight depression in ground, hidden at base of overhanging clumps of grasses or forbs.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Ardea alba Great egret	—/SA/—	Typically nest in large breeding colonies or rookeries. Breeding season generally February to August. Rookeries typically found in large trees, emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, irrigated croplands and pastures, and riparian habitat.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Athene cunicularia Burrowing owl	—/SC/—	Primarily a summer migrant to the area. Habitat includes open grassland with fossorial mammal burrows, often associated with ground squirrels. Use small mammal burrows for cover and natal dens. Breeding season is typically from February through August.	Low. A pair of burrowing owls was observed along the north embankment of CR 28H and 1,100 feet east of CR 102. The study area provides marginally suitable grassland habitat adjacent to the agricultural fields. No burrowing owls or signs of them were observed within 500 feet of the proposed project site.
Buteo swainsoni Swainson's hawk	—/T/—	Primarily spring/summer migrant to the Central Valley. Generally nests in riparian trees adjacent to grassland and agricultural areas with scattered trees. Associated with the Central Valley during the breeding season, migrating to Central and South America in the fall/winter.	Moderate. A pair of Swainson's Hawks was observed above the farmhouse approximately 0.28 mile west of the project site along CR 29. The study area provides marginally suitable foraging habitat adjacent to the agricultural fields.
Charadrius alexandrinus nivosus Western snowy plover	T/SC/—	Primarily a fall and winter migrant, common on sandy marine and estuarine shores, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Charadrius montanus Mountain plover	—/SC/—	Winters from northern California, southern Arizona. Found on short grasslands and plowed fields of the Central Valley from Sutter and Yuba cos. southward. Uses open grasslands, plowed fields with little vegetation, and open sagebrush areas.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Coccyzus americanus occidentails Western yellow-billed cuckoo	C/E/—	An uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California. Generally nests within dense foliage, deciduous trees and shrubs, especially willows.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Egretta thula Snowy egret	—/SA/—	The snowy egret is widespread in California along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. Presumably roosts in dense, emergent vegetation and in trees near water. Also rests in the habitats where it feeds.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Elanus leucurus White-tailed kite	—/SFP/—	Small raptor that nests in isolated trees in dry grass savannahs, meadows, and oak woodlands or trees along marsh edges. Breeds from February to October.	Low. Two CNDDB occurrences documented about 2.3 miles southeast of the proposed project site. Ruderal grassland within the proposed project site may provide suitable foraging habitat.
Nycticorax nycticorax Black-crowned night heron	—/SA/—	A fairly common, yearlong resident in lowlands and foothills throughout most of California. Feeds along the margins of lacustrine, large riverine, and fresh and saline emergent habitats. Nests and roosts in dense-foliaged trees and dense emergent wetlands. Nests on northeastern plateau from April to August	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Plegadis chihi White-faced ibis	—/SC/—	A rare visitor in the Central Valley, but is widespread during migration. Prefers to feed in fresh emergent wetland, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Progne subis Purple martin	—/SC/—	Spring migrant to the area. Largest North American swallow. Colonial nester in woodlands; mostly wood¬pecker cavities or human-made struc¬tures. Nests are often located in a tall isolated tree. Breeds from late March through July.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.
Xanthocephalus xanthocephalus Yellow-headed blackbird	—/SC/—	Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shoresof lacustrine habitat. Restricted distribution in Central Valley in winter, occurring mainly in the western portion.	Not Likely. No CNDDB occurrences documented within 5 miles of the proposed project site. No suitable habitat within the proposed project site.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Fish			
Archoplites interruptus Sacramento perch	—/SC/—	Sacramento perch are warm-water, lacustrine fish. They formerly inhabited sloughs, slow-moving rivers, and lakes of the Central Valley, but are now mostly found in reservoirs and farm ponds. They are often associated with beds of rooted, submerged, and emergent vegetation and other submerged objects.	Not Likely. No aquatic habitat is present within the proposed project site.
Pogonichthys macrolepidotus Sacramento splittail	—/SC/—	Benthic foragers. Associated with freshwater marsh, estuary, slow-moving river sections, and dead-end sloughs within the Sacramento and San Joaquin rivers. Requires flooded vegetation for spawning and foraging for young.	Not Likely. No aquatic habitat is present within the proposed project site.
Hypomesus transpacificus Delta smelt	T/T/—	Salt-tolerant. Endemic to the Sacramento–San Joaquin estuary, where it spends most of its adult life. Spawn in shallow, fresh or slightly brackish water upriver from the mixing zone, including the Sacramento River, Mokelumne River system, Cache Slough region, San Francisco Bay Delta, and Montezuma Slough area. Spawning occurs in fresh water between January and July.	Not Likely. No aquatic habitat is present within the proposed project site.
Oncorhynchus mykiss Central valley steelhead	T/SC/—	Anadromous. Associated with fresh, brackish, and marine riverine habitats. Spawns in main stems of the Sacramento and San Joaquin Rivers. Spawning occurs between December and June.	Not Likely. No aquatic habitat is present within the proposed project site.
Oncorhynchus tshawytscha Central Valley chinook, Spring-run	T/T/—	Anadromous. Associated with fresh, brackish, and marine riverine habitats. Spawns in main stems and tributaries of the Sacramento River. Principal holding and spawning areas were in the middle and headwater reaches, including the San Joaquin, Feather, and upper Sacramento and San Joaquin Rivers. Spawning occurs from late August through October.	Not Likely. No aquatic habitat is present within the proposed project site.

TABLE E-1
Special-Status Species List

Scientific Name Common Name	Status Federal/State/CNPS	Primary Habitat and Critical Seasonal Periods	Likelihood for Occurrence in Project Site and Comments
Oncorhynchus tshawytscha Central Valley chinook, winter-run	E/E/—	Anadromous. Associated with fresh, brackish, and marine riverine habitats. Spawns in main stems and tributaries of the Sacramento and San Joaquin Rivers. Principal holding and spawning areas were in the middle and headwater reaches including the San Joaquin, Feather, and upper Sacramento Rivers. Spawning occurs from April to mid August.	Not Likely. No aquatic habitat is present within the proposed project site.
Mammals			
Antrozous pallidus Pallid bat	—/SC/—	The pallid bat is a locally common species of low elevations in California. Occupies grasslands, shrublands, and woodlands. Needs drinking water.	Low. Suitable foraging habitat (grasslands) is present in the project area.
Lasionycteris noctivagans Silver-haired bat	—/—/—	Summer habitats include coniferous forests, woodlands, and riparian habitats. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. Needs drinking water.	Not-likely. No suitable habitat (forests, woodlands, and riparian habitats) present in the project area.
Lasiurus cinereus Hoary bat	—/—/—	Habitats suitable for bearing young include all woodlands and forests with medium to large-size trees and dense foliage. May be found at any location in California, although distribution patchy in southeastern deserts.	Not-likely. No suitable habitat (forests and woodland habitats) present in the project area.
Taxidea taxus American badger	—/SC/—	Stout-bodied, primarily solitary species that hunts for ground squirrels and other small mammal prey in open grassland, cropland, deserts, savanna, and shrubland communities. Badgers have large home ranges and spend inactive periods in underground burrows. Badgers typically mate in mid- to late summer and give birth between March and April.	Not-likely. No intact natural habitat present within the project area. No American badgers have been documented within 5 miles of the project area.

Sources:

50 CFR Part 227. Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington, Oregon, and California. Title 50 *Code of Federal Regulations*, Washington D.C.

National Marine Fisheries Service (NMFS). 1996. Biological Assessment for the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California as it affects the Sacramento River Winter Chinook Salmon.

USFWS. 1995. Sacramento-San Joaquin Delta Native Fishes Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon.

Matus, M.J. 1981. Vertebrate Inventory and Species Diversity of the Aerojet-General Sacramento Facility. September 4, 1981.

Key to Status Codes:

Federal Status:
C: Candidate for listing
E: Endangered
T: Threatened

State Status:
E: Endangered
T: Threatened
SC: California species of special concern
SFP: State fully protected
SA: Special animal

CNPS- California Native Plant Society Status:
1B = Rare, threatened or endangered in California and elsewhere and are rare throughout their range. According to CNPS, all of the plants constituting List 1B meet the definitions of Sec. 1901.
2 = Rare in California, but not elsewhere.

* Watch List or Species of Local Concern

Cultural Resources

Cogeneration Natural Gas Pipeline Relocation Project Yolo County Archaeological Survey Report

Prepared for

Sacramento Municipal Utility District

P.O. Box 15830 MS B203
Sacramento, CA 95852-1830

April 2009

Prepared by

Burleson Consulting, Inc.
950 Glenn Drive, Suite 135
Folsom, CA 95630

ACRONYMS AND ABBREVIATION

Burleson	Burleson Consulting, Inc.
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
NAHC	Native American Heritage Commission
NCIC	Northwest Information Center
NHPA	National Historic Preservation Act
PRC	Public Resources Code
ROW	right-of-way
SMUD	Sacramento Municipal Utilities District

Archaeological and other heritage resources can be damaged or destroyed through the uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of archaeological sites which should not be disclosed to unauthorized persons.

Information regarding the location, character or ownership of a historic resource is exempt from the Freedom of Information Act pursuant to 16 U.S.C. 470w-s (National Historic Preservation Act [NHPA]) and 16 U.S.C. § 470hh (Archaeological Resources Protection Act) and California State Government Code, Section 6254.10.

MANAGEMENT SUMMARY

This report documents a cultural resources inventory conducted by Burleson Consulting, Inc. (Burleson), for a proposed natural gas pipeline relocation project that would restore the pipeline to its original design requirements which were compromised by the realignment of CR (CR) 29. The California Energy Commission (CEC) approved the Sacramento Municipal Utilities District (SMUD) Cogeneration Pipeline Project Description on May 11, 1994. This relocation is being submitted as a Petition for Staff-Approved Project Modification under the CEC's Siting Regulation (20 California Code of Regulations [CCR] 1769(a)). As such SMUD is required to provide an analysis of the impacts the modification may have on the environment. This section addresses the cultural resources aspect of possible environmental impacts of the project.

The proposed pipeline relocation is limited to an approximate 150-foot segment of the pipeline west of CR 102 between CR 29 and an abandoned section of that road. The entire project area was field surveyed for cultural resources as a part of this study.

Archaeological record search results from the Northwest Information Center revealed that no prehistoric or historic resources or archaeological deposits were located within or adjacent to the proposed project site. There is one site located within a ½ mile radius of the project area. In addition, one study was done within the project area and four have been done within a ½ mile radius of the project area. However, no cultural resources were recorded within the project area.

The cultural resource inventory survey of the project area did not identify any prehistoric or historic resources which would be affected by the proposed pipeline relocation project.

INTRODUCTION

Burleson Consulting, Inc. conducted a cultural resources inventory survey of the proposed SMUD Yolo Gas Pipeline Relocation Project. SMUD proposes to relocate an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) near the intersection of CR 29 and CR 102 in Yolo County to restore the pipeline to its original design requirements with respect to pipeline operating pressure. SMUD's construction standards and SMUD's Integrity Management Program (IMP), effective December 17, 2004, specify additional pipeline wall thickness for reinforcement under all road crossings. After Line 700A was installed in 1995, CR 29 was realigned in 1996, thereby crossing Line 700A in an area of unreinforced wall thickness. Therefore, the pipeline relocation is necessary to restore the original safety margins and comply with SMUD's Integrity Management Program.

The land crossed by the proposed pipeline relocation is presently unimproved. The construction right-of-way (ROW) would be a 85-feet wide corridor. Staging, equipment laydown, and site access would be entirely contained within the 85-foot ROW. The permanent easement for the pipeline after construction would be 40 feet wide.

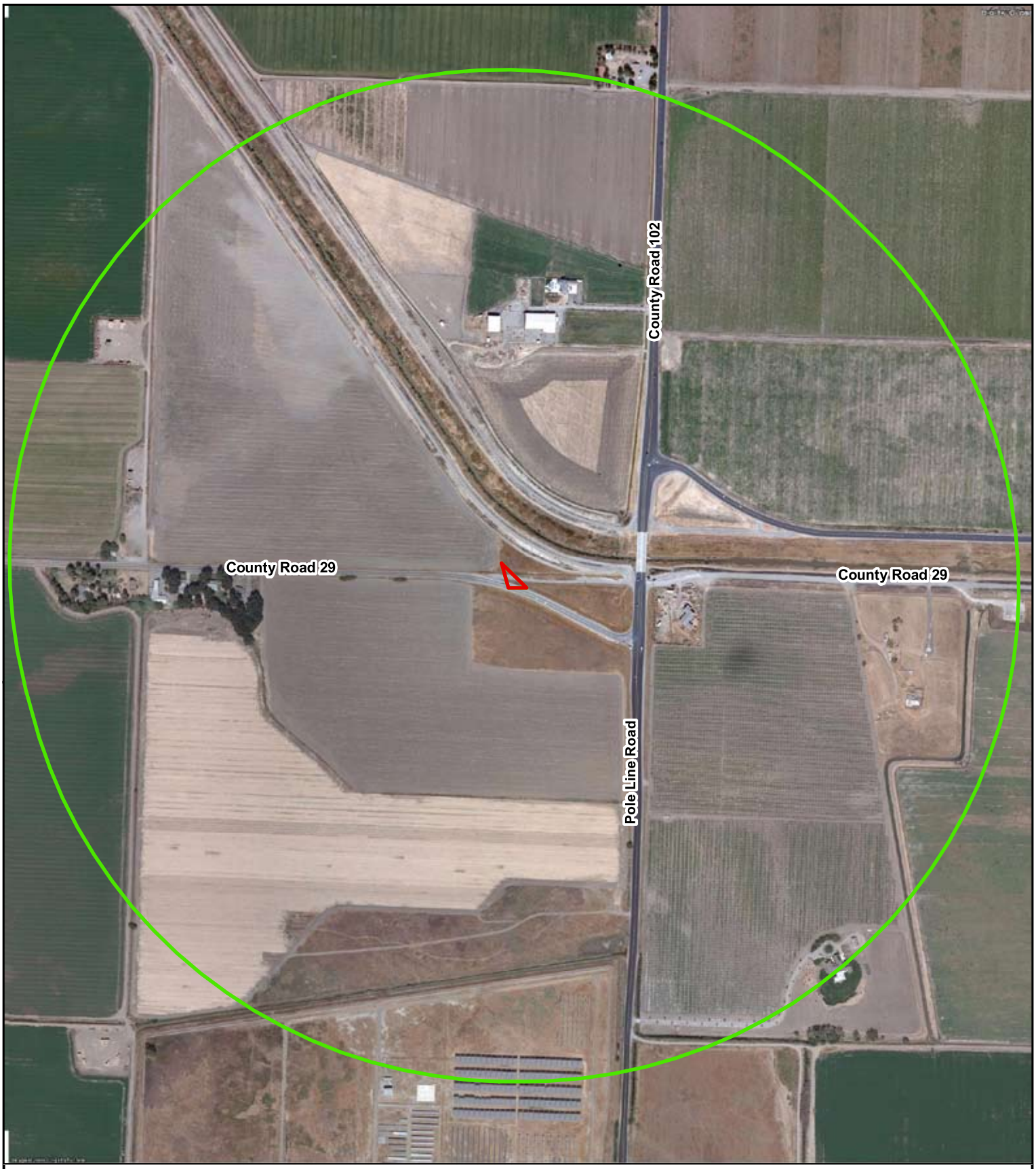


Figure 1
Gas Pipeline Yolo County
Cultural Resource Map

Legend

- Project Boundary
- Half Mile Project Buffer

N

0 500 1,000 1,500

Feet

Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008

PREFIELD RESEARCH

Prefield research conducted for the project included a records search and correspondence with the Native American Heritage Commission (NAHC) in Sacramento about the project. The record search was conducted by the Northwest Information Center (NCIC) of the California Historical Resources Information System at Sonoma State University, Rohnert Park, California on April 3, 2009. The records search was to determine if archaeological studies have previously occurred in or near the project area, and to identify the presence of previously recorded cultural resources in or within a ½ mile radius of the project area. The records search information is provided in Attachment A. The results are summarized below.

The records search revealed that 1 cultural resource study has occurred within the project area and 4 cultural resources studies have occurred within a ½ mile radius of the project area:

Within the project area:

- S-15985, Janis Offerman, 1994, Archaeological Survey Report, proposed replacement of Bridge No. 22C-076, 03-YOL-CR 03804-962053, Caltrans

Within ½ mile of the project area:

- S-015333, Sharon A. Waechter, 1993, Report on the First Phase of Archaeological Survey for the Proposed SMUD Gas Pipeline between Winters and Sacramento, Yolo, and Sacramento Counties, California, Far Western Anthropological Research Group, Inc.
- S-017674, Woodward-Clyde Consultants, 1995, Cultural Resources Monitoring Report for the SMUD Cogeneration Pipeline Project, Woodward-Clyde Consultatnts
- S-035031, URS, 2008, Cultural Resources Baseline Literature Review for the Urban Levee Project, URS
- S-035107, Janis Offerman, 2008, Willow Slough Bypass Slip Site Repair; Archaeological Survey Report, Department of Water Resources

All of these studies were negative for the presence of cultural resources within or adjacent to the project. The records search results identified one previously recorded prehistoric cultural resource (an isolated "granite mano") within ½ mile of the project area, reported in the S-017674 study.

The records search also included examination of other references on file at the Information Center to identify listed properties within ½ mile radius of the project area. These included:

- Office of Historic Preservation Historic Property Directory & Determinations of Eligibility (2007)
- California Inventory

In addition to the records search, the NAHC was contacted on March 30, 2009 with regard to the project and followed up on April 10, 2009 (telephone call) with regard to the project. NAHC examined their Sacred Lands File for sites or traditional cultural properties present in or near the project area. On April 16, 2009, the NAHC provided a list of Native American individuals and organizations who may have interests or concerns about the project, or who might share knowledge about other cultural resources in or near the project area. On April 20, 2009 letters regarding the project were sent to those individuals and groups to solicit information they may have regarding the project area. No responses were received. A copy of the NAHC correspondence is provided in Attachment B.

ETHNOGRAPHIC AND HISTORIC BACKGROUND

The Nisenan people's southern boundary is arguable but may include the project area (Wilson and Towne, 1978:388). The Miwok people may also have inhabited lands that would include the project area. The Miwok ("Plains" or "Eastern" Miwok) inhabited lands south of Sacramento, west toward Suisun Bay, east to the Sierra Nevada foothills and south to around the Calaveras River. (Levy, 1978:399).

The tribes living in the Sacramento Valley were not changed forever by the missions and trappers of the 18th and 19th centuries. It was the settlement of the valley by a largely Euro-American population that forced the tribes to give up their traditional lands and life ways. The hunter-gather activities utilized by the tribes became insupportable with the competition for land brought on by the increase in population.

Archaeological material still existing from these activities are usually limited to lithics in the form of cutting tools and projectile points from hunting and groundstone from food processing. However, human remains and associated grave goods may also be found.

FIELD METHODS AND RESULTS

An intensive pedestrian survey of the project area was conducted by Burleson Consulting, Inc. archaeologist Henry Davis on March 6, 2009, utilizing maps that detailed the project area. The entire project area was inspected for cultural resources. The survey included a complete surface inspection of the project area. Transects, averaging 5 meters in width, were walked across the project area. The area was dense with vegetation and had poor visibility. Ground scrapes were made with a hoe to facilitate inspection of the soil. The soil surface appeared to be disturbed by road construction and two drainage ditches. Various gravels were evident in the surface soil. Modern debris included two bicycle frames and pieces of furniture.

No new sites or cultural resources were identified in the project area as a result of the field survey.

CONCLUSION AND MANAGEMENT RECOMMENDATIONS

A cultural resources investigation involving a records search and surface-intensive archaeological survey was conducted for the Natural Gas Pipeline Relocation Project. The records search did not identify any previously recorded cultural resources in or adjacent to the project area. Although there have been 4 cultural resource studies within a ½ mile radius of the project area and 1 study within the project area, no cultural resources were recorded within the project area and the archaeological inventory survey did not identify any cultural resources within the project area.

The California Environmental Quality Act (CEQA) requires that before approving a project, the lead agency must identify and examine the significant adverse environmental effects that might result from project implementation. This includes impacts to cultural resources which are deemed significant. CEQA guidelines define a significant historical resource as "a resource listed or eligible for listing in the California Register of Historical Resources" (Public Resources Code [PRC] Section 5024.1). A historical resource may be eligible for inclusion in the California register if the resource:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
- is associated with the lives of persons important in our past; or
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

In addition, a resource is presumed to constitute a historical resource if it is included in a "local register of historical resources" unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (State CEQA Guidelines Section 15064.5[a][2]). The CEQA Guidelines require consideration of unique archaeological sites (Section 15064.5). (See also PRC Section 21083.2.) A "unique archaeological resource" is defined in CEQA (PRC Section 21083.2[g]) as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site does not meet the criteria for inclusion in the California Register but does meet the definition of a unique archaeological resource as outlined in the Public Resources Code (Section 21083.2), it is entitled to special protection or attention under CEQA. Treatment options under Section 21083.2 of CEQA include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archaeological resource").

Additionally, Section 15064.5(e) of the CEQA Guidelines requires that excavation activities be stopped whenever human remains are uncovered. The county coroner must then be contacted to determine that nature of the discovery. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted and a Most Likely Descendant will be assigned to consult with the lead agency to develop an agreement for the treatment and disposition of the remains. Specific state laws addressing human burials and Native American concerns include Section 7050.5 of the California Health and Safety Code, Sections 5097.94, 5097.98 and 5097.99 of the Public Resources Code, and Senate Bill 447 of 1987. These laws are designed to protect Native American burials and skeletal remains and to allow for the notification of likely Native American descendants to assure the sensitive treatment and disposition of such remains.

Because of the possibility of a new discovery of cultural resources during excavation it is recommended that an archaeological monitor be present during all earth disturbing activities of the proposed project.

REFERENCES CITED

Levy, Richard. 1978. Eastern Miwok. In *Handbook of North American Indians,* Volume 8: California, p. 399. Edited by Robert F. Heizer. Smithsonian Institution, Washington, D.C.

Wilson, N. L., and A. H. Towne. 1978. Nisenan. In R. F. Heizer (ed.), *Handbook of North American Indians.* Volume 8: California, p. 388. Smithsonian Institution, Washington D.C.

Attachment A

Records Search Results

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

March 5, 2009

Ms. Sally Torpy, Coordinator
North Central Information Center
California State University, Sacramento
6000 J Street, Suite 208
Sacramento, CA 95819-6100

Subject: Request for Archaeological and Historical Records Search, Sacramento Municipal Utility District, Gas Pipeline Relocation Project

Dear Ms. Torpy:

Burleson Consulting, Inc. would like to request a 0.5 mile archaeological and historical records search for the area surrounding the intersection of Pole Line Road and County Road 29, north of the City of Davis, in Yolo County, California. At this time we are requesting a list only and not a map of the locations. It is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014. Please see the attached maps.

I request that Burleson Consulting, Inc. be billed for the records search.

If you have any questions, please call Beth Kelly at 916/984-4651 ext. 2.

Sincerely,

Henry Davis
Archaeologist

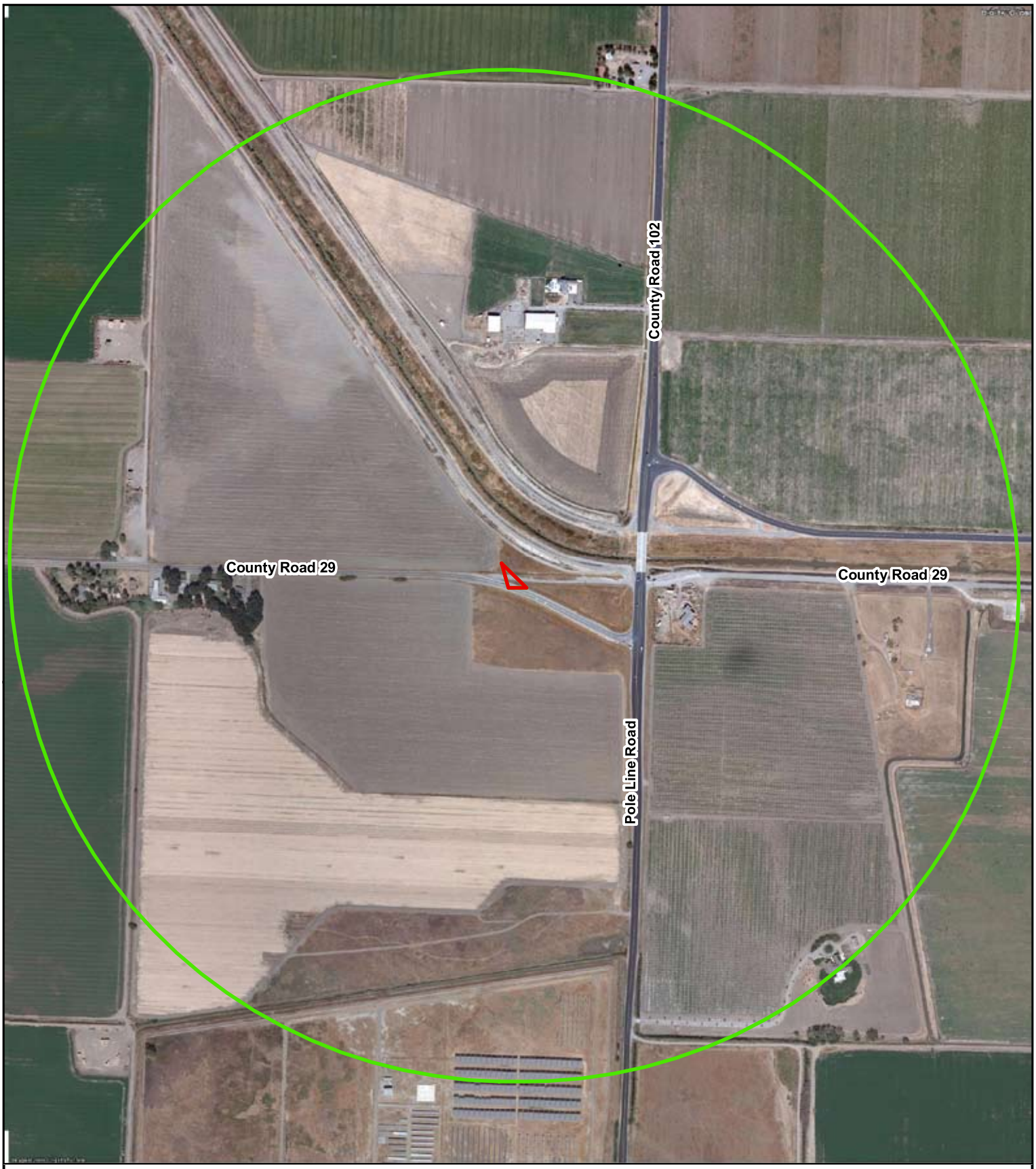


Figure 1
Gas Pipeline Yolo County
Cultural Resource Map

Legend

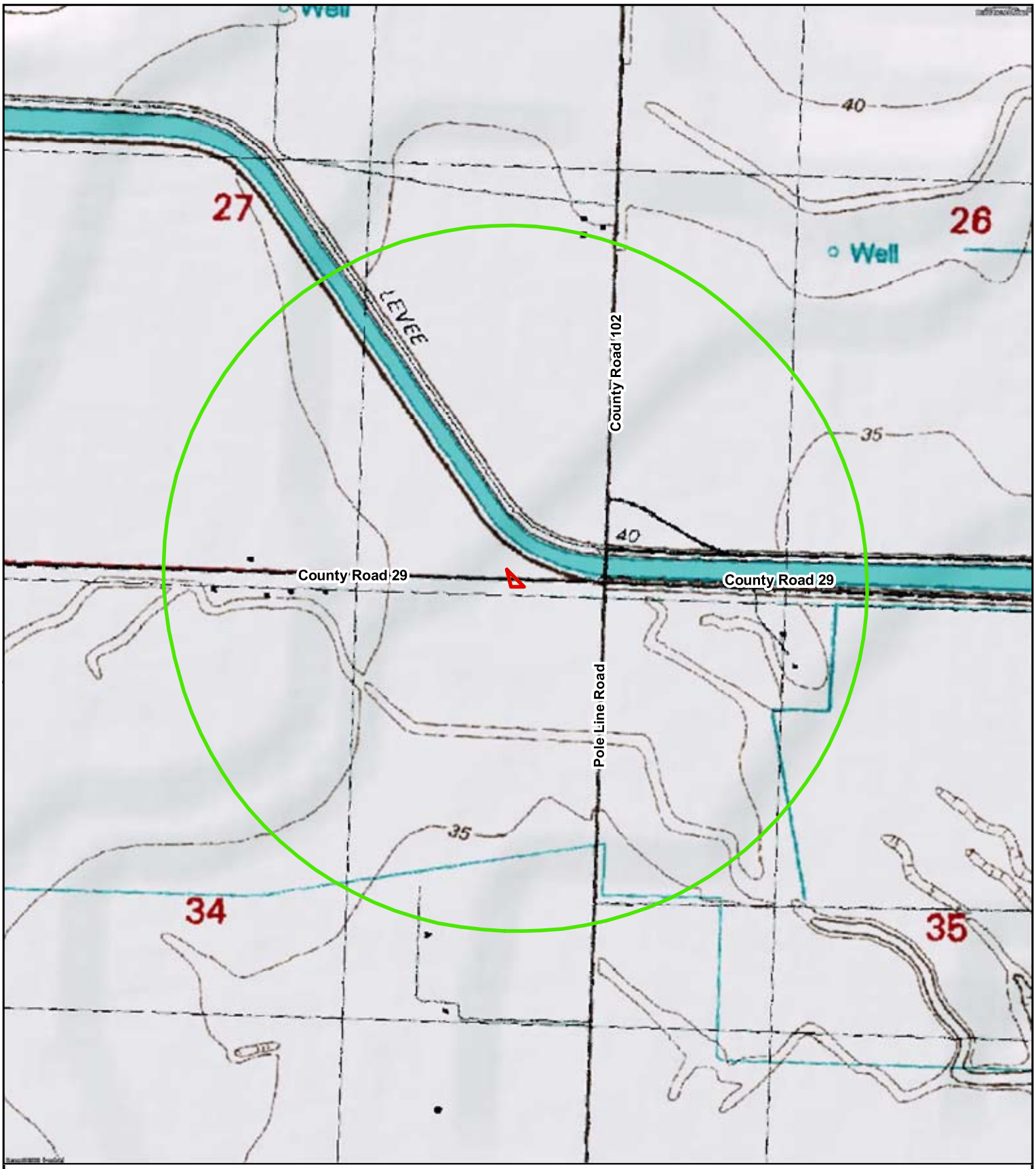
- Project Boundary
- Half Mile Project Buffer

N

0 500 1,000 1,500

Feet

Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008



Legend

- Project Boundary
- Half Mile Project Buffer

Figure 1
Gas Pipeline Yolo County
Cultural Resource Map

N

0 720 1,440 2,160
Feet

Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1303 Maurice Avenue
Rohnert Park, California 94928-3609
Tel: 707.664.0880 • Fax: 707.664.0890
E-mail: leigh.jordan@sonoma.edu
http://www.sonoma.edu/nwic

MEMO

Date: April 3, 2009 NWIC File No.: 08-1143

To: Henry Davis

From: Bryan Much

Re: Records Search Summary Letter for SMUD Yolo Gas Pipeline Relocation Project, Yolo County, CA

Davis 7.5' QUAD

Sites in project area: There are no sites located within your project area.

Sites within ½ mile radius: There is one site located in your ½ mile radius: P-51-000135, an isolated "granite mano".

Studies in: There is one study located within your project area: S-15985 (Offermann 1994). The location of this study is mapped on the attached map and the full bibliographic information has been included.

Studies within ½ mile radius: There are four studies located within the ½ mile radius of your project area: S-15333 (Waechter 1993), S-17674 (Woodward-Clyde Consultants 1995), S-35031 (URS 2008), and S-35107 (Offermann 2008). The full bibliographic information has been included.

OHP HPD: There are no listings located within your project area or within ½ mile of your project area.

California Inventory: There are no listings located within your project area or within ½ mile of your project area.

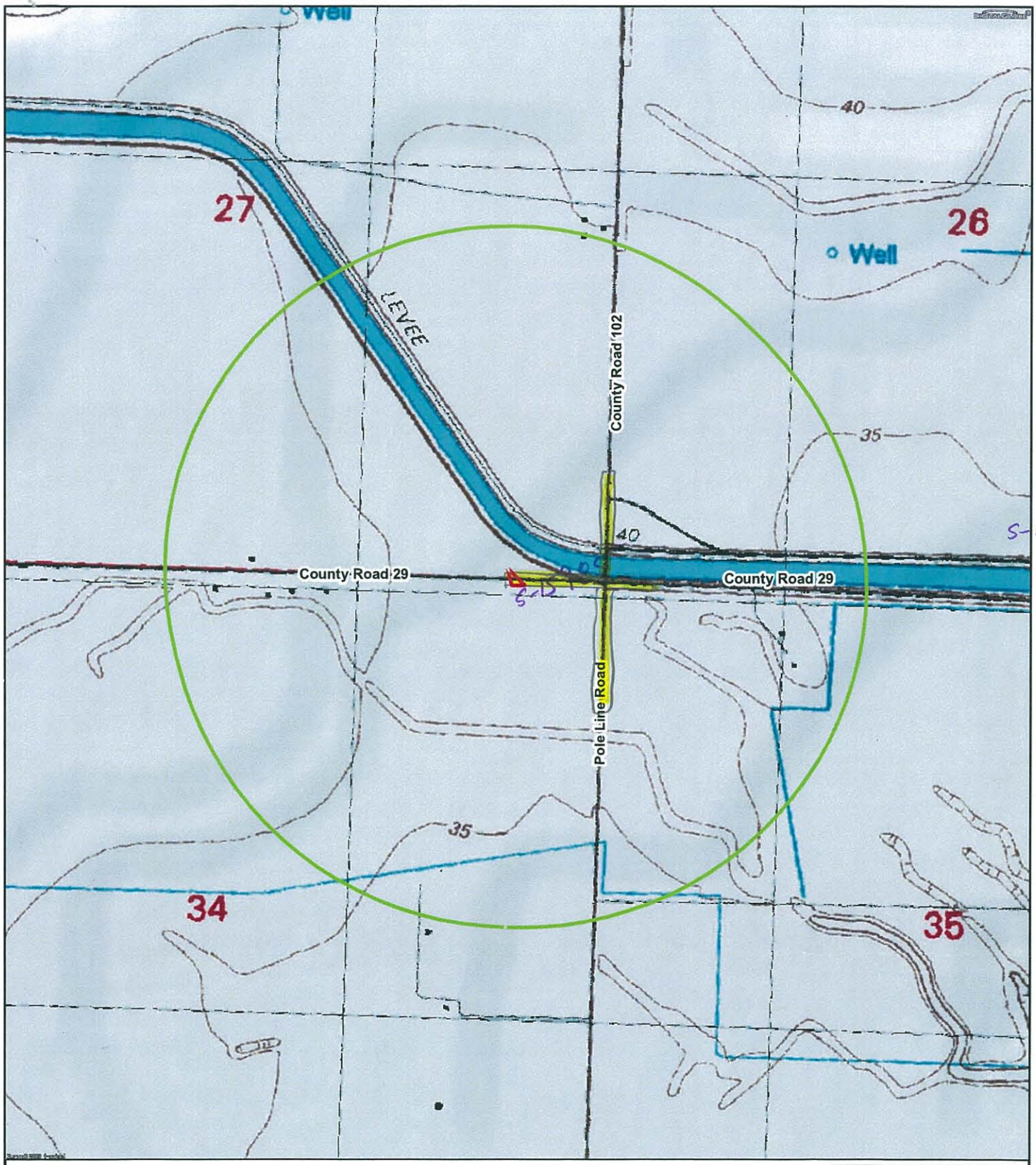


Figure 1
Gas Pipeline Yolo County
Cultural Resource Map

Legend

- Project Boundary
- Half Mile Project Buffer

N

0 720 1,440 2,160
Feet

Sacramento Municipal Utility District
Sacramento County, California
Data Source: Aerial image provided by Digital Globe 9-1-2008

Northwest Information Center Resource Listing

Primary No.	HRI No.	Trinomial	Name	Other IDs	Reports (S-)
P-57-000135			SMUD-ISO-1		17674; 35031

Northwest Information Center Report Listing

S-number	Year	Author(s)	Title	Origin
S-015333	1993	Sharon A. Waechter	Report on the First Phase of Archaeological Survey for the Proposed SMUD Gas Pipeline between Winters and Sacramento, Yolo and Sacramento Counties, California	Far Western Anthropological Research Group, Inc.
S-015985	1994	Janis Offermann	Archaeological Survey Report, proposed replacement of Bridge No. 22C-076, 03-YOL-CR 03804-962053	Caltrans
S-017674	1995	Woodward-Clyde Consultants	Cultural Resources Monitoring Report for the SMUD Cogeneration Pipeline Project	Woodward-Clyde Consultants
S-035031	2008	URS	Cultural Resources Baseline Literature Review for the Urban Levee Project	URS
S-035107	2008	Janis Offermann	Willow Slough Bypass Slip Site Repair: Archaeological Survey Report	Department of Water Resources

Northwest Information Center Report Detail Record: S-015333

Previous designation(s):

Citation Information

Authors: Sharon A. Waechter
Year: 1993
Title: Report on the First Phase of Archaeological Survey for the Proposed SMUD Gas Pipeline between Winters and Sacramento, Yolo and Sacramento Counties, California
Originator: Far Western Anthropological Research Group, Inc.
No. Pages: 18
No. Maps: 9
Report Type(s): Archaeological survey
Inventory Size: c 25 li mi
No. Sites: 1
No. Informal:
Collections:
Disclosure: Not for publication

Associated Resources

Notes

One unrecorded historic building complex.

Location Info

County(ies): Yolo
USGS 7.5' Quads: Davis
Merritt
Sacramento West
Taylor Monument
Winters
Address:

Database Record Metadata

	Date	User	
Entered:	4/7/2005	nwic-main	
Last Modified:	10/11/2007	hagell	
IC Actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Date Mapped:

Northwest Information Center Report Detail Record: S-015985

Previous designation(s):

Citation Information

Authors: Janis Offermann
Year: 1994
Title: Archaeological Survey Report, proposed replacement of Bridge No. 22C-076, 03-YOL-CR 03804-962053
Originator: Caltrans
No. Pages: 3
No. Maps: 3
Report Type(s): Archaeological survey
Inventory Size: c 1000 li ft
No.Sites: 0
No. Informal:
Collections:
Disclosure: Not for publication

Associated Resources

Notes

Location Info

County(ies): Yolo
USGS 7.5' Quads: Davis
Address:

Database Record Metadata

	Date	*User*	
Entered:	4/7/2005	nwic-main	
Last Modified:	1/23/2008	hagell	
IC Actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Date Mapped:

Northwest Information Center Report Detail Record: S-017674

Previous designation(s):

Citation Information

Authors: Woodward-Clyde Consultants
Year: 1995
Title: Cultural Resources Monitoring Report for the SMUD Cogeneration Pipeline Project
Originator: Woodward-Clyde Consultants
No. Pages: 69
No. Maps: 17
Report Type(s): Monitoring report
Inventory Size:
No.Sites: 4
No. Informal:
Collections:
Disclosure: Not for publication

Associated Resources

Primary No.	*HRI No.*	*Trinomial*	*Name*
P-57-000135			SMUD-ISO-1
P-57-000136			SMUD-ISO-3
P-57-000137			SMUD-ISO-4

Notes

4 isolated finds

Location Info

County(ies): Yolo
USGS 7.5' Quads: Clarksburg
Davis
Merritt
Sacramento West
Winters
Address:

Database Record Metadata

	Date	*User*	
Entered:	4/7/2005	nwic-main	
Last Modified:	11/17/2006	lisa	
IC Actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Date Mapped:

Northwest Information Center Report Detail Record: S-035031

Previous designation(s):

Citation Information

Authors: URS
Year: 2008
Title: Cultural Resources Baseline Literature Review for the Urban Levee Project
Originator: URS
No. Pages: 420
No. Maps: 54
Report Type(s): Records/literature search
Inventory Size: c 350 li mi
No.Sites: 31
No. Informal:
Collections:
Disclosure: Not for publication

Associated Resources

Primary No.	*HRI No.*	*Trinomial*	*Name*
P-48-000112		CA-SOL-271/H	
P-48-000549			C-Davis-1
P-57-000022		CA-YOL-19	
P-57-000023		CA-YOL-20	
P-57-000024		CA-YOL-21	FISK
P-57-000025		CA-YOL-22	LOVDAL
P-57-000026		CA-YOL-23	GASTELMANN
P-57-000027		CA-YOL-24	BRYTE
P-57-000028		CA-YOL-25	FORNESS
P-57-000030		CA-YOL-27	
P-57-000039		CA-YOL-36	
P-57-000048		CA-YOL-45	INDIAN HEAD
P-57-000057		CA-YOL-59	
P-57-000075		CA-YOL-82	MARTY
P-57-000076		CA-YOL-100	SCHNEIDER
P-57-000107		CA-YOL-132	
P-57-000110		CA-YOL-135	
P-57-000132			Valley Oak Groves & Valley Oak Tress and
P-57-000135			SMUD-ISO-1
P-57-000195		CA-YOL-179H	
P-57-000201		CA-YOL-187	O Jesus
P-57-000211			
P-57-000400			C-Davis-1
P-57-000403			REF 1-H
P-57-000417			REF 17-H
P-57-000423			Navigation Obstruction 12
P-57-000424			
P-57-000435			
P-57-000521			EB-2
P-57-000530		CA-YOL-213H	LNWI-C-8

Notes

Location Info

County(ies): Sacramento
Solano
Yolo
Sutter
San Joaquin
Other
USGS 7.5' Quads: Sacramento West

Clarksburg
Davis
Merritt
Taylor Monument
Verona
Grays Bend
Woodland

Address:

Database Record Metadata

	Date	*User*
Entered:	10/8/2008	hagell
Last Modified:	10/22/2008	hagell
IC Actions:		
Date Mapped:		

Northwest Information Center Report Detail Record: S-035107

Previous designation(s):

Citation Information

Authors: Janis Offermann
Year: 2008
Title: Willow Slough Bypass Slip Site Repair: Archaeological Survey Report
Originator: Department of Water Resources
No. Pages: 25
No. Maps: 2
Report Type(s): Archaeological survey
Inventory Size:
No.Sites: 0
No. Informal:
Collections: No
Disclosure: Not for publication

Associated Resources

Notes

notes levee and toe road as resources, but does not record them

Location Info

County(ies): Yolo
USGS 7.5' Quads: Davis
Address:

Database Record Metadata

	Date	*User*	
Entered:	12/10/2008	hagell	
Last Modified:	4/3/2009	muchb	
IC Actions:	*Date*	*User*	*Action taken*
	4/3/2009	muchb	entered in report information

Date Mapped:

Attachment B

Native American Heritage Commission Correspondence

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

March 30, 2009

Native American Heritage Commission
915 Capitol Mall, #364
Sacramento, CA 95814

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a project to relocate a 150-foot segment of Cogeneration Natural Gas Pipeline near the intersection of Pole Line Road and County Road 29, north of the City of Davis, in Yolo County, California. The work is being done for our client Sacramento Municipal Utility District (SMUD). At this time we are requesting a list only and not a map of the locations. It is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014. Please see the attached map.

We are seeking comments from Native American representatives, and would greatly appreciate your sending us a list of Native American representatives for the project area. Also, please consult your traditional cultural properties index for this area. A cultural resources records search is also in progress which will be followed by an intensive pedestrian survey of the proposed project area.

Thank you for your cooperation in this matter. Please call Beth Kelly at 916/984-4651 ext. 2 or email bk@burlesonconsulting.com if you have any questions.

Sincerely,

Henry Davis

Henry Davis
Archeologist

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

April 16, 2009

Henry Davis, Archaeologist
BURLESON CONSULTING, INC.
950 Glenn Drive, Suite 135
Folsom, CA 95630

Sent by Fax: 916-984-8261

Number of Pages: 2

Re: Proposed Yolo Segment Cogeneration Gas Pipeline Relocation, Yolo County.

Dear Mr. Davis:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Yolo County
April 14, 2009

Kesner Flores
PO Box 1047
Wheatland , CA 95692
calnagpra@hotmail.com
925-586-8919
Wintun / Patwin

Cortina Band of Indians
Elaine Patterson, Chairperson
PO Box 1630
Williams , CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax
Wintun / Patwin

Cortina Band of Indians
Karen Flores, Vice Chairperson
PO Box 1630
Williams , CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax
Wintun / Patwin

Rumsey Indian Rancheria of Wintun
Marshall McKay, Chairperson
P.O. Box 18
Brooks , CA 95606
(530) 796-3400
(530) 796-2143 Fax
Wintun (Patwin)

Rumsey Indian Rancheria of Wintun
Leland Kinter, Native Cultural Renewal Committee
P.O. Box 18
Brooks , CA 95606
(530) 979-6346
(530) 796-3400 - office
(530) 796-2143 Fax
Wintun (Patwin)

Rumsey Indian Rancheria of Wintun
Cynthia Clarke, Native Cultural Renewal Committee
P.O. Box 18
Brooks , CA 95606
(530) 796-3400 - office
(530) 796-2143 Fax
Wintun (Patwin)

Wintun Environmental Protection Agency
P.O. Box 1839
Williams , CA 95987
corwepa@hotmail.com
(530) 473-3318
(530) 473-3319
(530) 473-3320 - Fax
Wintun (Patwin)

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Yolo Segment Cogeneration Gas Pipeline Relocation, Yolo County.

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 17, 2009

Marshall McKay, Chairperson
Rumsey Indian Rancheria of Wintun
P.O. Box 18
Brooks, CA 95606

Dear Mr. McKay:

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

We have already contacted the Native American Heritage Commission, and California Historic Resources Information System and their record searches have failed to indicate the presence of Native American cultural resources in the immediate project vicinity. They provided us with your contact name, a Native American or organization, that may supply information or recommend others with specific knowledge regarding cultural resources at this location. Therefore, should you have any information or concerns that you wish to share regarding this project, please contact Beth Kelly at 916/984-4651 ext. 2 or email bk@burlesonconsulting.com.

Sincerely,

Henry Davis

Henry Davis
Archeologist

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 17, 2009

Elaine Patterson, Chairperson
Cortina Bank of Indians
P.O. Box 1630
Williams, CA 95987

Dear Ms. Patterson:

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

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Sincerely,

Henry Davis

Henry Davis
Archeologist

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 20, 2009

Wintun Environmental Protection Agency
P.O. Box 1839
Williams, CA 95987

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

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Sincerely,

Henry Davis

Henry Davis
Archeologist

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 20, 2009

Leland Kinter
Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606

Dear Mr. Kinter:

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

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Sincerely,

Henry Davis

Henry Davis
Archeologist

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 20, 2009

Kesner Flores
P.O. Box 1047
Wheatland, CA 95692

Dear Kesner Flores:

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

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Sincerely,

Henry Davis

Henry Davis
Archeologist

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 20, 2009

Karen Flores, vice Chairperson
P.O. Box 1630
Williams, CA 95987

Dear Ms. Flores:

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

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Sincerely,

Henry Davis

Henry Davis
Archeologist

BURLESON CONSULTING, INC.

950 Glenn Drive, Suite 135
Folsom, California 95630

(916) 984-4651
(916) 984-8261 Fax

April 20, 2009

Cynthia Clarke
Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606

Dear Ms. Clarke:

Burleson Consulting, Inc. is conducting a cultural resources inventory survey for a proposed relocation of an approximate 150-foot segment of the existing 20-inch Cogeneration Natural Gas Pipeline (Line 700A) located near the intersection of CR 29 and CR 102 in Yolo County, to restore the pipeline to its original design requirements. The work is being done for our client Sacramento Municipal Utility District (SMUD). The project area is delineated on the attached map. The project is located within California, Mt. Diablo, Meridian T9N, R2E, section 27 UTM zone 10 (X,Y) 610370, 4272014.

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Sincerely,

Henry Davis

Henry Davis
Archeologist

List of Property Owners Potentially Affected by the Modification

Appendix D

Appendix D
List of Property Owners Potentially Affected by the Modification

Mary Jane Lillard
1416
Claremont Way
Sacramento, CA 95822

James & Thomas Kelly
10483
S McDonough
Reedley, CA 93654

James & Cheryl Thompson
23464
CR 102
Woodland, CA 95776

John & Mary Lavezzo
100
Franciscan Dr
Vallejo, CA 94589

Alyce LLC
24555
CR 102
Davis, CA 95618

Ruth Hill
41515
CR 29
Davis, CA 95616

Steven & Michelle Alger
41559
CR 29
Davis, CA 95616

Edward & Shirley Miller
41587
CR 29
Davis, CA 95616

Joeseph Suzanne Heidrick Fam Trust
36826
CR 24
Woodland, CA 95695

Binning Ranch LLC
11354
White Rock Rd
Rancho Cordova, CA 95742

Corvell Village Company Inc
3500
Anderson Rd
Davis, CA 95616

Heidrick & McGinnis Property
36826
CR 24
Woodland, CA 95695

Corvell Village CO G William Streng
622
Cantrill Dr
Davis, CA 95618

Ronald & Sandi Riemenschneider
23740
CR 102
Woodland, CA 95776

City of Davis
23
Russel Bldv
Davis, CA 95616

Peter Sturtevant
13155
Noel Rd
Dallas, TX 75240

William & Cindy Robinson Fam Trust
41413
CR 29
Davis, CA 95616

John & Sara McNamara
Davis, CA 95617