

Proposed Initial Study and Mitigated Negative Declaration for Conditional Use Permit No. 19-07 for the Hanford Biogas Cluster Project

December 2019



Lead Agency:



1400 W. Lacey Blvd., Bld. 6
Hanford, CA 93230

Prepared By:



324 S Santa Fe, Suite A
Visalia, Ca 93292

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Section 1

Initial Study/Negative Declaration Process



Kings County
 Community Development Agency
 1400 W. Lacey Blvd., Bld. 6
 Hanford, CA 93230

SECTION 1
CEQA Review Process

Project Title: Conditional Use Permit No. 19-07 for the Hanford Biogas Cluster Project

1.1 California Environmental Quality Act Guidelines

Section 15063(a) of the California Environmental Quality Act (CEQA) Guidelines requires that the Lead Agency prepare an Initial Study; however if the Lead Agency can determine that an EIR will clearly be required for the project, an initial study is not required, but may still be desirable. All phases of the project planning, implementation, and operation must be considered in the Initial Study. The purposes of an Initial Study, as listed under Section 15063(c) of the CEQA Guidelines, include:

- (1) Provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or negative declaration;*
- (2) Enable an applicant or lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration;*
- (3) Assist the preparation of an EIR, if one is required, by:*
 - (A) Focusing the EIR on the effects determined to be significant,*
 - (B) Identifying the effects determined not to be significant,*
 - (C) Explaining the reasons for determining that potentially significant effects would not be significant, and*
 - (D) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.*
- (4) Facilitate environmental assessment early in the design of a project;*
- (5) Provide documentation of the factual basis for the finding in a negative declaration that a project will not have a significant effect on the environment*
- (6) Eliminate unnecessary EIRs;*
- (7) Determine whether a previously prepared EIR could be used with the project.*

1.2 Initial Study

The Initial Study provided herein covers the potential environmental effects of the construction, installation, and operation of 7.3-mile low pressure biogas pipeline and biogas upgrading facility affecting approximately 9 acres in Kings County, CA. Kings County will act as the Lead Agency for processing the Initial Study/Negative Declaration pursuant to the CEQA and the CEQA Guidelines.

1.3 Environmental Checklist

The Lead Agency may use the CEQA Environmental Checklist Form [CEQA Guidelines, Section 15063(d)(3) and (f)] in preparation of an Initial Study to provide information for determining if the project will have

significant effects on the environment. A copy of the completed Environmental Checklist is set forth in **Section Three**.

1.4 Notice of Intent to Adopt a Negative Declaration

The Lead Agency shall provide a Notice of Intent to Adopt a Negative Declaration (CEQA Guidelines, Section 15072) to the public, responsible agencies, trustee agencies and the County Clerk within which the project is located, sufficiently prior to adoption by the Lead Agency of the Negative Declaration to allow the public and agencies the review period. The public review period (CEQA Guidelines, Section 21091(b)) shall not be less than 20. If the draft mitigated negative declaration is submitted to the State Clearinghouse for review, the review period shall be at least 30 days.

Prior to approving the project, the Lead Agency shall consider the proposed Negative Declaration together with any comments received during the public review process, and shall adopt the proposed Negative Declaration only if it finds on the basis of the whole record before it, that there is no substantial evidence that the project will have a significant effect on the environment and that the Negative Declaration reflects the Lead Agency's independent judgment and analysis.

The written and oral comments received during the public review period will be considered by Kings County prior to adopting the Negative Declaration. Regardless of the type of CEQA document that must be prepared, the overall purpose of the CEQA process is to:

- 1) Assure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns;
- 2) Provide for full disclosure of the project's environmental effects to the public, the agency decision-makers who will approve or deny the project, and the responsible trustee agencies charged with managing resources (e.g. wildlife, air quality) that may be affected by the project; and
- 3) Provide a forum for public participation in the decision-making process pertaining to potential environmental effects.

According to Section 15070 a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

- (a) *The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or*
- (b) *The initial study identifies potentially significant effects, but:*
 - (1) *Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and*
 - (2) *There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.*

The Environmental Checklist Discussion contained in Section Three of this document has determined that the environmental impacts of the project are less than significant with mitigation measures and that a Mitigated Negative Declaration is adequate for adoption by the Lead Agency.

1.5 Negative Declaration or Mitigated Negative Declaration

The Lead Agency shall prepare or have prepared a proposed Negative Declaration or Mitigated Negative Declaration (CEQA Guidelines Section 15070) for a project subject to CEQA when the Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment.

The proposed Negative Declaration or Mitigated Negative Declaration circulated for public review shall include the following:

- (a) A brief description of the project, including a commonly used name for the project.
- (b) The location of the project, preferably shown on a map.
- (c) A proposed finding that the project will not have a significant effect on the environment.
- (d) An attached copy of the Initial Study documenting reasons to support the finding.
- (e) Mitigation measures, if any.

1.6 Intended Uses of Initial Study/Negative Declaration Documents

The Initial Study/Negative Declaration document is an informational document that is intended to inform decision-makers, other responsible or interested agencies, and the general public of potential environmental effects of the proposed project. The environmental review process has been established to enable the public agencies to evaluate environmental consequences and to examine and implement methods of eliminating or reducing any adverse impacts. While CEQA requires that consideration be given to avoiding environmental damage, the Lead Agency must balance any potential environmental effects against other public objectives, including economic and social goals.

Kings County, as Lead Agency, will make a determination, based on the environmental review for the Environmental Study, Initial Study and comments from the general public, if there are less than significant impacts from the proposed project and the requirements of CEQA can be met by adoption of a Mitigated Negative Declaration.

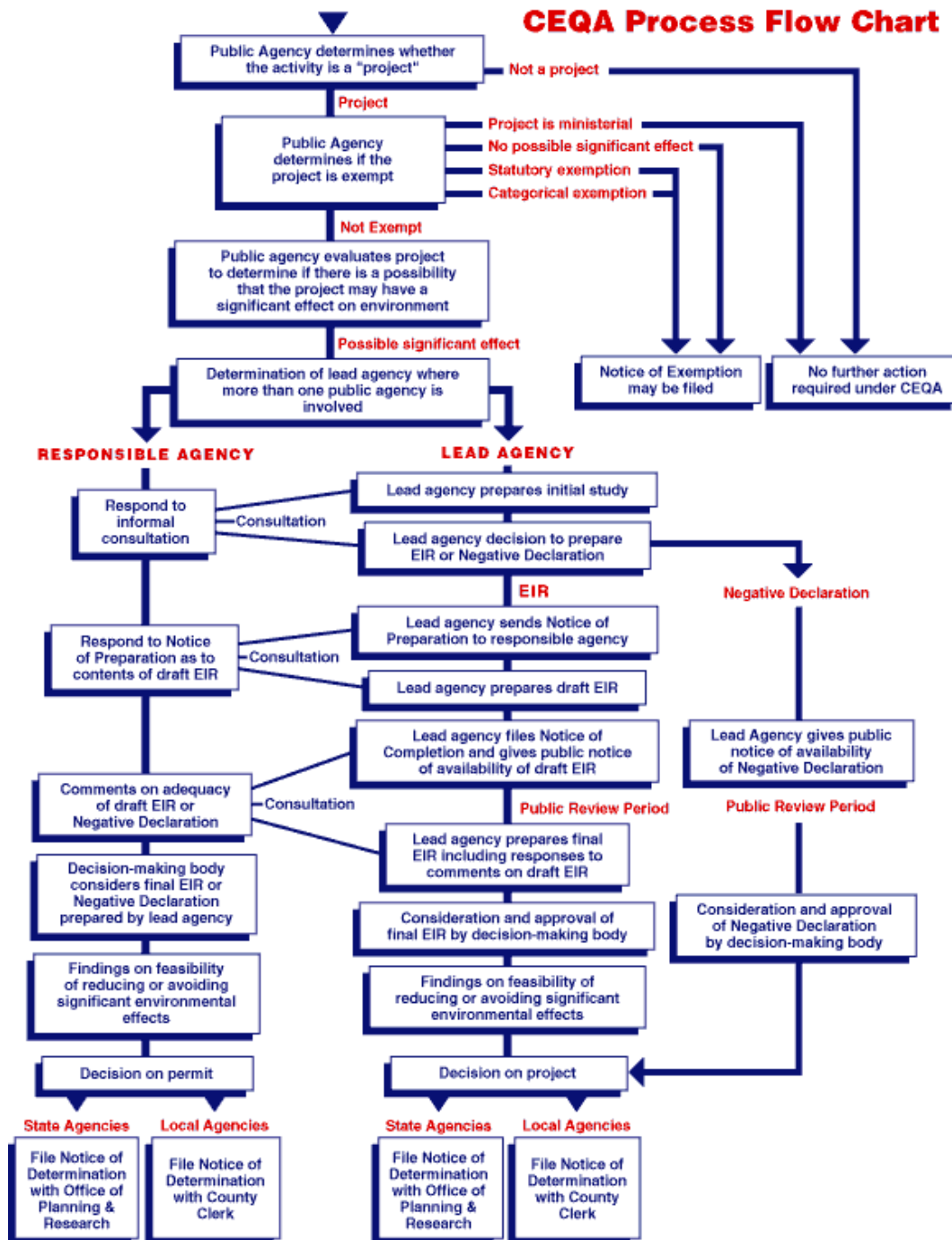
1.7 Notice of Determination (NOD)

The Lead Agency shall file a Notice of Determination within five working days after deciding to approve the project. The Notice of Determination (CEQA Guidelines, Section 15075) shall include the following:

- (1) An identification of the project including the project title as identified on the proposed negative declaration, its location, and the State Clearinghouse identification number for the proposed negative declaration if the notice of determination is filed with the State Clearinghouse.*
- (2) A brief description of the project. The agency's name and the date on which the agency approved the project.*
- (3) The determination of the agency that the project will not have a significant effect on the environment.*
- (4) A statement that a negative declaration or a mitigated negative declaration was adopted pursuant to the provisions of CEQA.*
- (5) A statement indicating whether mitigation measures were made a condition of the approval of the project, and whether a mitigation monitoring plan/program was adopted.*

- (6) The address where a copy of the negative declaration or mitigated negative declaration may be examined.
- (7) The identity of the person undertaking a project which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies or the identity of the person receiving a lease, permit, license, certificate, or other entitlement for use from one or more public agencies

1.8 CEQA Process Flow Chart



Section 2

Project Description



Kings County
Community Development Agency
1400 W. Lacey Blvd., Bld. 6
Hanford, CA 93230

SECTION 2 Project Description

Project Title: Conditional Use Permit No. 19-07 for the Hanford Biogas Cluster Project

2.1 Project Description & Purpose

The purpose of this project is to reduce methane emissions from livestock waste while generating renewable energy through a biogas recovery system. The project would involve the construction, installation and operation of a 7.3-mile pipeline, which will connect existing anaerobic digesters at Cloverdale Dairy, Wreden Ranch Dairy, and Hollandia Dairy, to a proposed biogas upgrading facility. The approximate gas production from each of these facilities is shown in Table 2-1, below.

| Facility Name | Approximate Gas Production | | | |
|--------------------|----------------------------|------------------------------|------------------|----------------------|
| | Maximum Daily (scf/day) | Average Annual (scf/year) | Max (scf/min) | Average (scf/min) |
| Cloverdale Dairy | 576,000 | 210,240,000 | 400 | 400 |
| Hollandia Dairy | 288,000 | 105,120,000 | 200 | 200 |
| Wreden Ranch Dairy | 576,000 | 210,240,000 | 400 | 400 |
| Total | 1,440,000 | 525,600,000 | 1000 | 1000 |

Table 2-1. Predicted gas production from involved upgrading facilities.

The proposed biogas upgrading facility will be constructed in two phases. The first phase will construct the biogas upgrading facility to a capacity of 1,500 scfm to accommodate the first three dairies that will be connected to the proposed project (Cloverdale, Wreden Ranch, and Hollandia). Phase 2 will increase the capacity to 3,000 scfm to accommodate future connections to other anaerobic digester facilities.

Additional digesters from other bovine facilities will be connected to the proposed pipeline and biogas upgrading facility in the future. The additional projects will be subject to County site plan review, which are ministerial projects that are exempt from environmental review under CEQA.

The biogas pipeline will be 12" in diameter at its widest point and will be located at least 72" below the existing ground surface where the pipeline is installed within cultivated farmland and 36" below the existing ground surface in access roads/uncultivated areas. The expected affected area is approximately 10 feet wide per linear foot of pipe for backhoe trenching.

The pipe will be installed under roads and canals by method of jack-and-bore. In this method, pits are dug on each side of the road (or canal) and a ram is placed in one pit to punch a steel casing pipe underneath. Once the steel casing is received on the other side, the operational pipe is slid into the casing and connected on each side. A two (2) foot thick concrete cap will be placed on top of said piping which is

located within any unpaved portions of the Public Right-of-Way. All pipeline installation activities will be designed subject to the approval by the Kings County Public Works Department.

Once installed, the pipeline will connect the anaerobic digester facilities at Cloverdale Dairy, Hollandia Dairy, and Wreden Ranch Dairy to the proposed biogas upgrading facility. The biogas produced by these anaerobic digesters would be delivered through the proposed pipeline to a blower and a gas-liquid “scrubber” to remove any excess liquid or moisture. This process separates the biomethane from the carbon dioxide and other contaminants (See Figure 2-1) After the gas exits this phase, it is delivered through a meter to monitor production, and gas will leave the facility through the proposed, low pressure gas-gathering line.

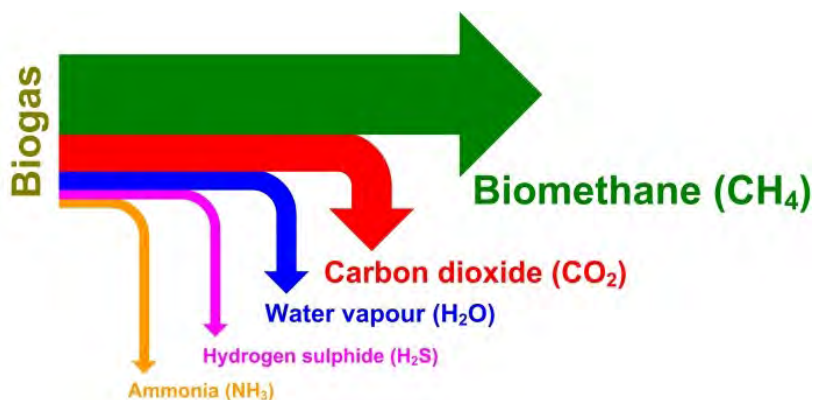


Figure 2-1. Biogas upgrading process.

2.2 Project Location

The location of the proposed biogas upgrading facility and pipeline (hereinafter referred to as the “Project Site”) is located in the east portion of Kings County, approximately 6 miles north of Corcoran and 8 miles south of Hanford. The pipeline is approximately 7.3 miles long and would connect existing anaerobic digesters at Cloverdale Dairy, Hollandia Dairy, and Wreden Ranch Dairy to a proposed biogas upgrading facility, located east of 6th Avenue.

The pipeline begins on Cloverdale Dairy and travels east for approximately 1.3 miles along an existing canal before turning north for approximately 0.55 miles and then east for approximately 0.48 miles where the pipeline crosses BNSF railroad, approximately 0.4 miles south of Lansing Avenue. The pipeline travels south parallel to the railroad for approximately 650 feet before turning east for approximately 1.3 miles where the pipeline connects to the existing anaerobic digester at Wreden Ranch Dairy. The pipeline then travels north, along the east side of Highway 43, for approximately 0.5 miles, west for 0.5 miles, and north for 0.5 miles to connect to the existing anaerobic digester at Hollandia Dairy. From Hollandia Dairy, the pipeline travels east for approximately 1 mile, north for approximately 0.25 miles, and west for approximately 0.6 miles where it crosses 6th Avenue and connects to the proposed biogas upgrading facility located.

The project would involve construction on approximately 9 acres within parcels 028-190-043, 028-190-080, 028-190-045, 028-190-049, 028-204-010, 028-204-012, 028-250-005, 028-250-006, 028-250-010,

028-250-012, 028-250-014, 028-250-021, 028-260-005, 029-260-019, 028-260-034, 028-260-038, 028-260-039, and 028-260-040.

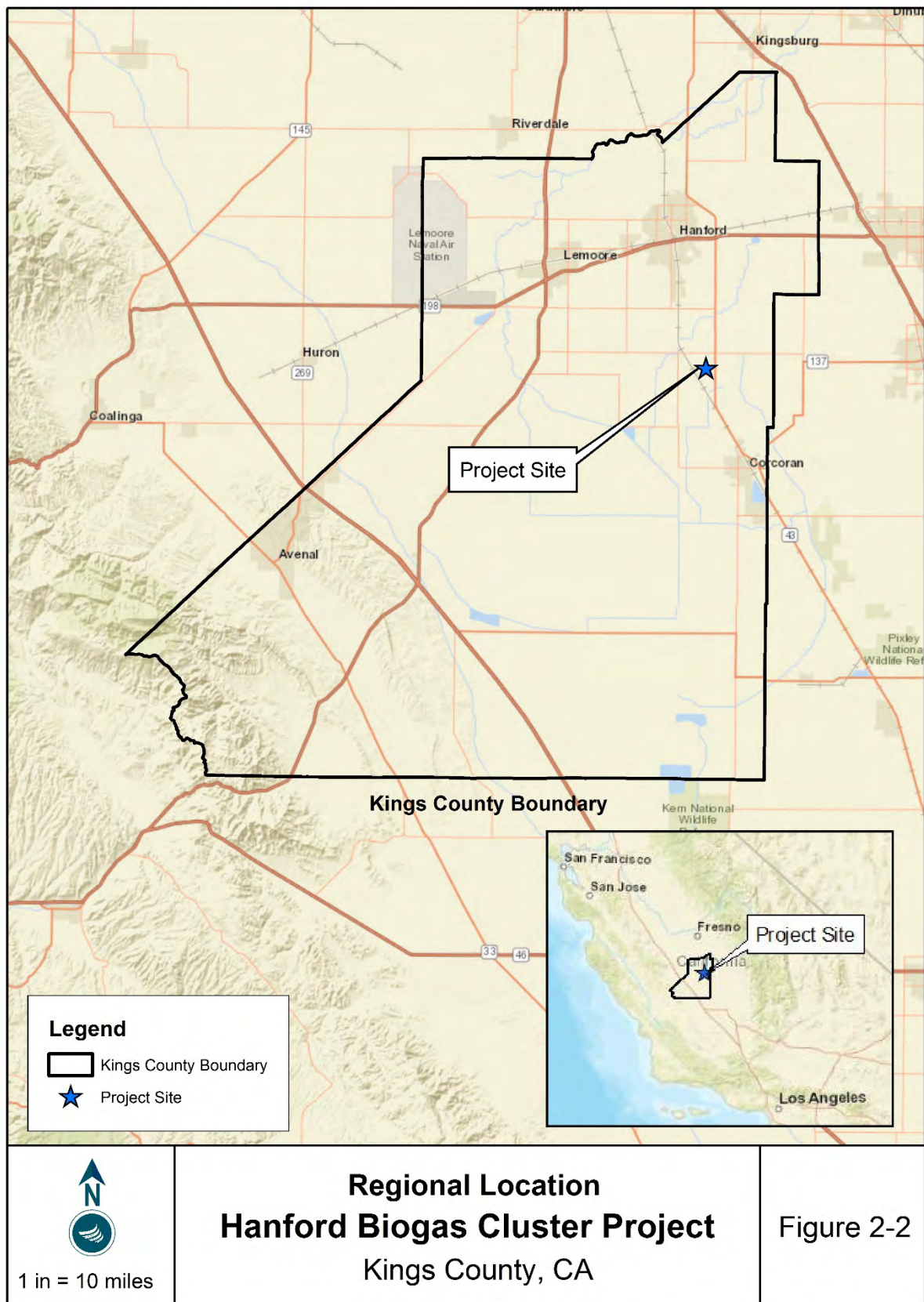
More parcels may be affected if the proposed pipeline is expanded to connect other dairies to the proposed biogas upgrading facility in the future. The properties on which the pipeline would be located are designated by Kings County as General Agriculture 40 ac. under the General Plan and Zoning code. Current land use on the surrounding properties includes dairy farming and cultivated agriculture. The project area is surrounded by General Agriculture land use designations to the north, east, south, and west.

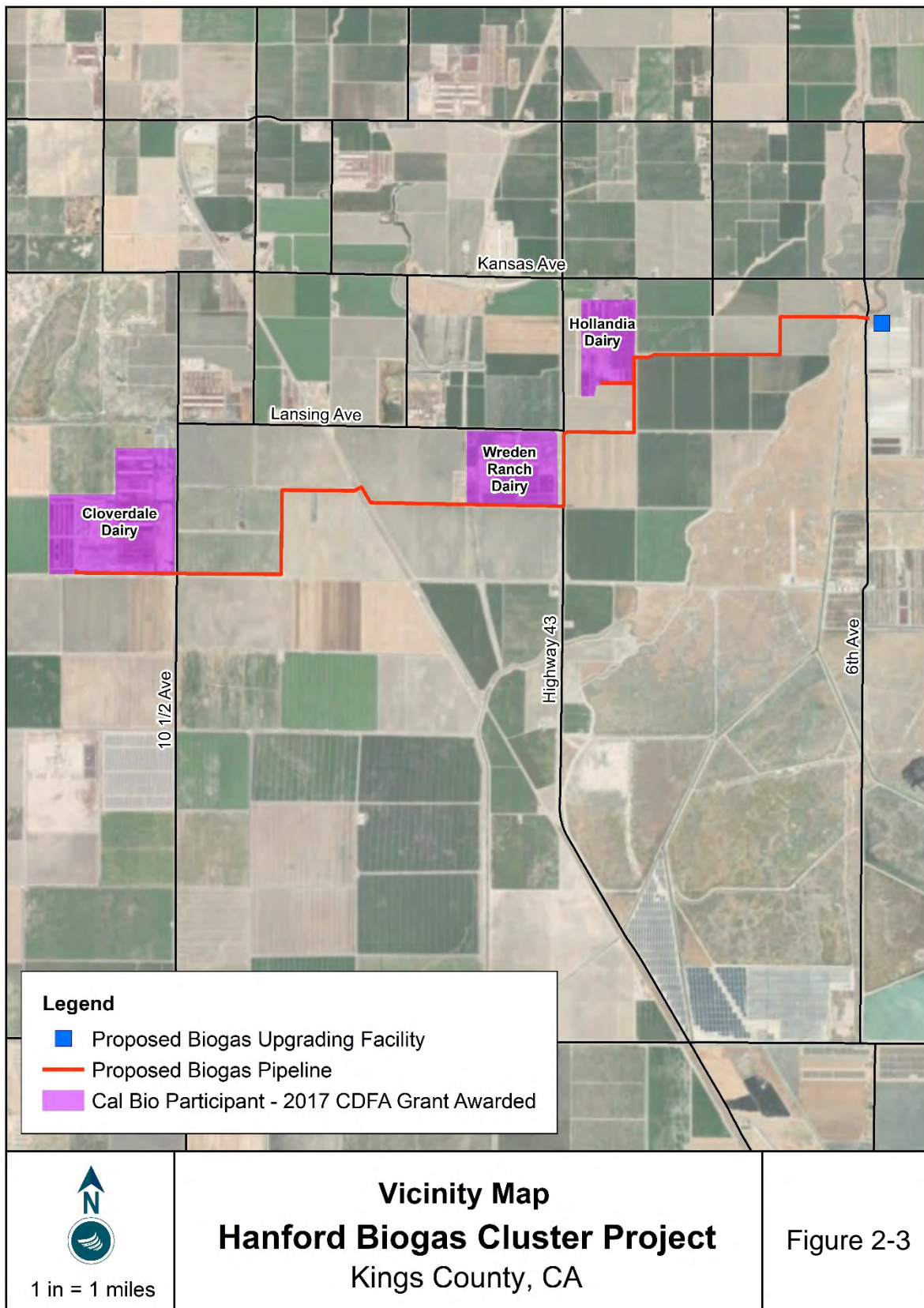
2.3 Other Permits and Approvals

Other permits and approvals required for the Hanford Biogas Cluster Project are listed below. It should be noted that this list is not exhaustive and additional permits and approvals may also be required.

- *County of Kings Code of Ordinances, Buildings and Structures, Section 5-7.* No person shall erect, construct, enlarge, alter, repair, move, improve, remove, convert, demolish, wire or engage in plumbing, any building or structure in the unincorporated territory of the county without first obtaining a separate building, electric, plumbing, and mechanical permit for the work proposed on each such building or structure from the building.
- *Burlington Northern & Santa Fe BNSF Railway Company.* The proposed project would cross BNSF Railway Company's right-of-way. As such, an Application for Pipeline Crossing would be required. As part of the application process, the applicant will be required to provide payment for the following insurance requirements:
 - Commercial General Liability Insurance
 - Business Automobile Insurance
 - Workers Compensation and Employers Liability Insurance
 - Railroad Protective Liability Insurance
- *California Department of Transportation, Encroachment Permit.* The project would encroach on State ROW as the proposed pipeline crosses Highway 43. As such, a CalTrans Encroachment Permit would be required.
- *Central Valley Regional Quality Control Board, NPDES Permit.* The proposed Project Site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB requires a National Pollution Discharge Elimination System (NPDES) Permit for projects disturbing more than one acre of total land area. A Stormwater Pollution Prevention Plan (SWPPP) is required as part of this permit. Because the project is greater than one acre, a NPDES Permit and SWPPP will be required.
- *Kings County, Encroachment Permit.* The proposed project would encroach on County Right-of-Way (ROW) as the proposed pipeline crosses Rd. 10 ½ and Lansing Avenue. As such, an Encroachment Permit through Kings County would be required.

- *Kings County, Site Plan Review.* A Site Plan Review Application is required, if the proposed pipeline is expanded to connect other dairies to the proposed biogas upgrading facility in the future, to ensure that future expansions meet applicable zoning standards as well as State and Federal statutes.
- *San Joaquin Valley Air Pollution Control District, Authority to Construct/Permit to Operate.* Authority to Construct Permits are required prior to building or installing certain equipment. A Permit to Operate is required prior to operation of that equipment. An Authority to Construct/Permit to Operate will be required for the following:
 - Thiopaq (or equivalent) wet scrubber h₂s removal system consisting of wet caustic h₂s Scrubber with a bioreactor and sulfur separator,
 - Iron media scrubbers for h₂s removal,
 - Product gas scrubber,
 - Compressors,
 - Wet scrubber co₂ removal system or membrane co₂ removal system,
 - Flashing vessel co₂ and h₂s stripping vessel,
 - Electrically heated thermal swing adsorption (tsa) gas drier and purifier activated carbon adsorption,
 - Vacuum pressure swing adsorption (vpsa) gas polishing system,
 - 45 mm btu/hr zule or equivalent ultra-low emission enclosed emergency biogas flare, if applicable





Section 3

Evaluation of Environmental Impacts



Kings County
 Community Development Agency
 1400 W. Lacey Blvd., Bld. 6
 Hanford, CA 93230

SECTION 3

Evaluation of Environmental Impacts

Project Title: Conditional Use Permit No. 19-07 for the Hanford Biogas Cluster Project

This document is the Initial Study/Mitigated Negative Declaration for the proposed construction and operation of a 7.3-mile biogas pipeline and a biogas upgrading facility. In the future, additional anaerobic digesters and pipeline projects may connect to the mainline and upgrading facility. The additional projects will be subject to County Site Plan Review, which are Ministerial projects that are exempt from environmental review under Section 15268 of the *Guidelines for California Environmental Act (CEQA)*, implemented through Kings County Board of Supervisors *Resolution No. 16-001*, adopted January 5, 2016. Kings County will act as the Lead Agency for this project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

3.1 Purpose

The purpose of this environmental document is to implement the California Environmental Quality Act (CEQA). Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA as follows:

- (1) Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.*
- (2) Identify the ways that environmental damage can be avoided or significantly reduced.*
- (3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.*
- (4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.*

This Initial Study of environmental impacts has been prepared to conform to the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). According to Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

- (a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or*
- (b) The initial study identifies potentially significant effects, but:*
 - (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and*
 - (2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.*

3.2 Initial Study/Mitigated Negative Declaration

1. **Project Title:** Conditional Use Permit No. 19-07 for the Hanford Biogas Cluster Project
2. **Lead Agency:** Kings County
Community Development Agency
Contact: Chuck Kinney, Deputy Director - Planning
1400 W. Lacey Blvd., Bld. 6
Hanford, CA 93230
(559) 852-2670 FAX 584-8989
3. **Applicant:** California Bioenergy, LLC
Contact: Neil Black, President
324 S. Santa Fe, Suite A
Visalia, CA 93292
(559) 667-9560
4. **Project Location:** The proposed Project Site is located in the east portion of Kings County, approximately 6 miles north of Corcoran and 5 miles southeast of Hanford. The pipeline is approximately 7.3 miles long and would connect existing anaerobic digesters at Cloverdale Dairy, Hollandia Dairy, and Wreden Ranch Dairy to a proposed biogas upgrading facility, located on the east of 6th Avenue approximately $\frac{1}{4}$ of a mile south of Kansas Avenue. Construction of anaerobic digesters is not part of this project, as Site Plan Reviews have already been approved for all anaerobic digesters presently involved with the project. The parcels involved in the proposed project are listed below. More parcels may be affected if the proposed pipeline is expanded to connect other dairies to the proposed biogas upgrading facility in the future. Each additional dairy that connects to the proposed biogas pipeline and the proposed biogas upgrading facility in the future would be subject to Site Plan Review approval.

| | | | |
|---------------|---------------|---------------|---------------|
| • 028-190-043 | • 028-204-012 | • 028-250-014 | • 028-260-038 |
| • 028-190-080 | • 028-250-005 | • 028-250-021 | • 028-260-039 |
| • 028-190-045 | • 028-250-006 | • 028-260-005 | • 028-260-040 |
| • 028-190-049 | • 028-250-010 | • 029-260-019 | |
| • 028-204-010 | • 028-250-012 | • 028-260-034 | |
5. **General Plan Designation:** The Kings County General Plan designates the parcels involved in the project as General Agriculture 40 Ac.
6. **Zoning Designation:** The Kings County Zoning Plan designates the parcels involved in the project as General Agricultural (AG-40).
7. **Surrounding Land Uses and Settings:** The Hanford Biogas Cluster Project is located in unincorporated Kings County, in the southern portion of the San Joaquin Valley. The Project Site is situated within agricultural lands dominated by dairy operations and irrigated agriculture. The area is characterized by a history of farming, ranching, and in the past, oil exploration. In addition

to Cloverdale Dairy, Wreden Ranch Dairy, and Hollandia Dairy, there are nine other bovine facilities located within the project vicinity (see Figure 3-3).

- 8. Project Description:** The project would involve the construction, installation and operation of a 7.3-mile pipeline and a biogas upgrading facility. The primary purpose of the project is to transport raw biogas from nearby dairy facilities and upgrade that gas to natural gas standards.

The biogas pipeline will be 12" in diameter at its widest point and will be located at least 72" below the existing ground surface where the pipeline is installed within cultivated farmland and 36" below the existing ground surface in access roads/uncultivated areas. The expected affected area is approximately 10 feet wide per linear foot of pipe for backhoe trenching.

The pipe will be installed under roads and canals by method of jack-and-bore. In this method, pits are dug on each side of the road (or canal) and a ram is placed in one pit to punch a steel casing pipe underneath. Once the steel casing is received on the other side, the operational pipe is slid into the casing and connected on each side. A two (2) foot thick concrete cap will be placed on top of said piping which is located within any unpaved portions of the Public Right-of-Way. All pipeline installation activities will be designed subject to the approval by the Kings County Public Works Department.

Once installed, the pipeline will connect the anaerobic digester facilities at Cloverdale Dairy, Hollandia Dairy, and Wreden Ranch Dairy to the proposed biogas upgrading facility. The biogas produced by these anaerobic digesters would be delivered through the proposed pipeline to a blower and a gas-liquid "scrubber" to remove any excess liquid or moisture. This process separates the biomethane from the carbon dioxide and other contaminants (See Figure 2-1) After the gas exits this phase, it is delivered through a meter to monitor production, and gas will leave the facility through the proposed, low pressure gas-gathering line.

The proposed biogas upgrading facility will be constructed in two phases. The first phase will construct the biogas upgrading facility to a capacity of 1,500 scfm to accommodate the first three dairies that will be connected to the proposed project (Cloverdale, Wreden Ranch, and Hollandia). Phase 2 will increase the capacity to 3,000 scfm to accommodate future connections to other anaerobic digester facilities..

It is anticipated that the three dairies involved in the proposed project would generate raw biogas at an approximate rate of 1,000 scfm (see table 2-1). When the capacity of the upgrading facility is increased to 3,000 scfm, the system will be able to accommodate raw biogas from additional facilities to reach this capacity. The number of dairies/bovine facilities that could potentially connect to the biogas upgrading facility is dependent on the size of the dairy/bovine facility and estimated gas production from that facility. Based on average heard sizes of facilities within the vicinity of the project area, it is estimated that the project could connect to 5-10 additional dairy/bovine facilities in the future. The additional projects will be subject to County site plan review, which are ministerial projects that are exempt from environmental review under CEQA. Construction is proposed to begin in March of 2020 and continue through September of 2020. See Figure 3-2 for site layout.

- 9. Parking and access:** Vehicular access to the project will be available on 6th Avenue and Kansas Avenue. These roads provide full access to the entire Project Site. Parking for this project will be

required in compliance with the County Improvement Standards. During construction, workers will utilize existing facility parking areas and/or temporary construction staging areas for parking of vehicles and equipment.

10. Landscaping and Design All landscaping and design components will comply with Article 4, Section 418.B.5 of the Kings County Development Code for the AG-40 Zone District. The landscape and design plans will be required at time the project submits for building permit on the project and will be subject to the “California Model Water Efficient Landscape Ordinance.”

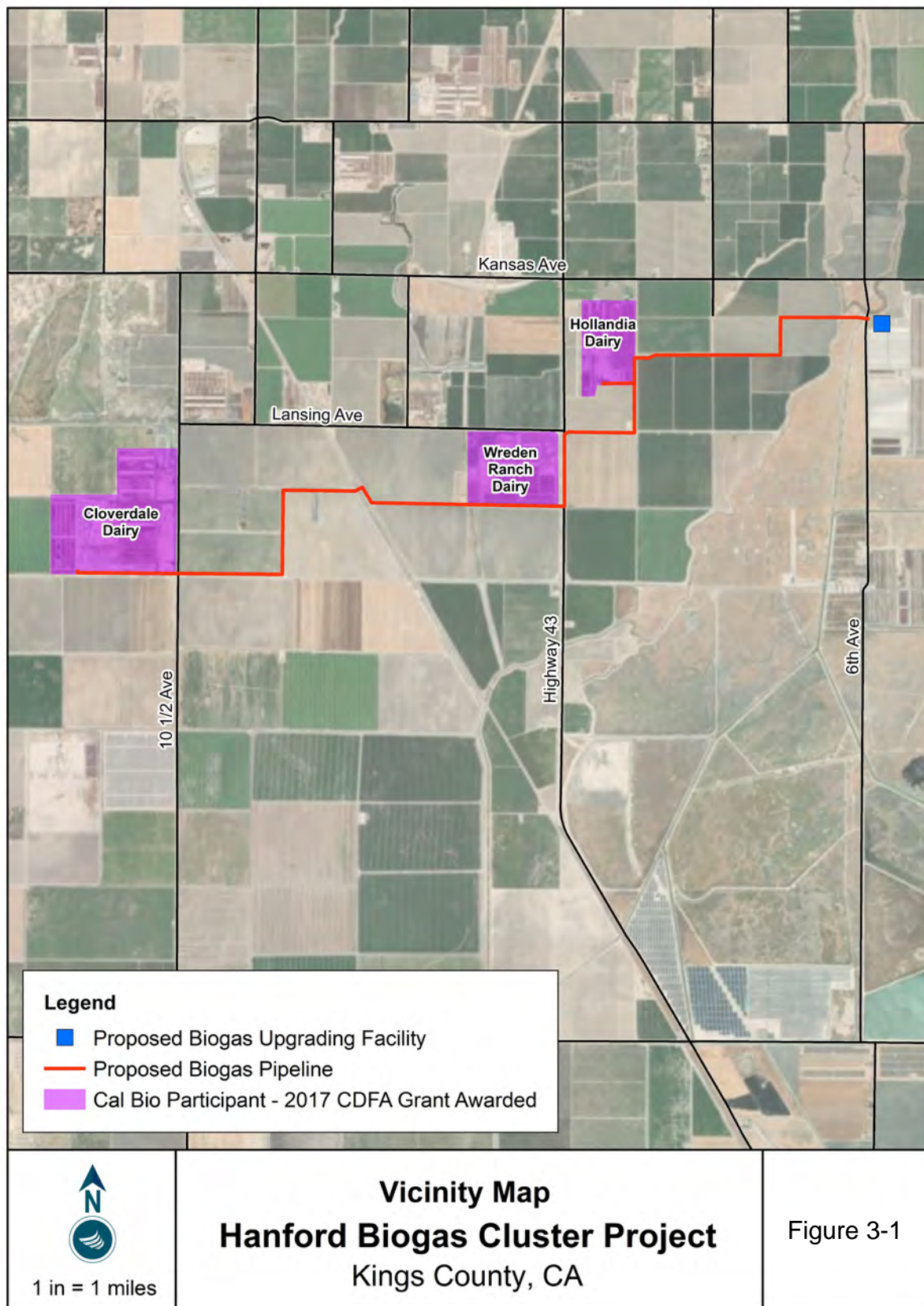
11. Utilities and Electrical Services: The biogas upgrading facility will require new electrical service, which is in progress with PG&E. No wastewater will be generated, and all stormwater will be contained on-site. The project will be serviced by existing water entitlements and no new water service would be required.

12. Project Components: The discretionary approvals required from Kings County for the proposed project include:

- Conditional Use Permit

Acronyms

| | |
|---------|---------------------------------------------------|
| BMP | Best Management Practices |
| CAA | Clean Air Act |
| CCR | California Code of Regulation |
| CDFG | California Department of Fish and Game |
| CEQA | California Environmental Quality Act |
| CWA | California Water Act |
| DHS | Department of Health Services |
| FEIR | Final Environmental Impact Report |
| FPPA | Farmland Protection Policy Act |
| ISMND | Initial Study Mitigated Negative Declaration |
| MCL | Maximum Contaminant Level |
| ND | Negative Declaration |
| NAC | Noise Abatement Criteria |
| RCRA | Resource Conservation and Recovery Act of 1976 |
| RWQCB | Regional Water Quality Control Board |
| SHPO | State Historic Preservation Office |
| SJVAPCD | San Joaquin Valley Air Pollution Control District |
| SWPPP | Storm Water Pollution Prevention Plan |



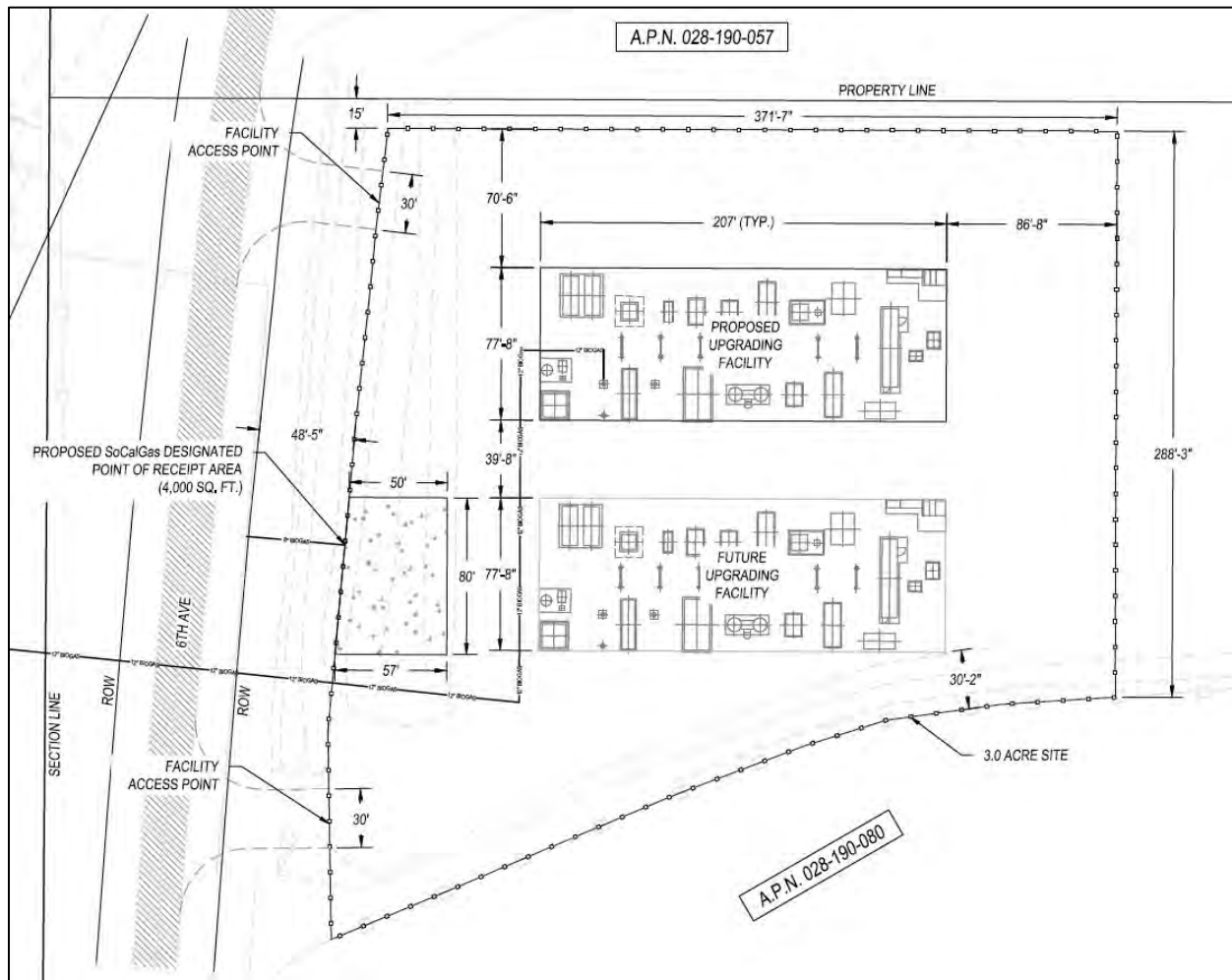
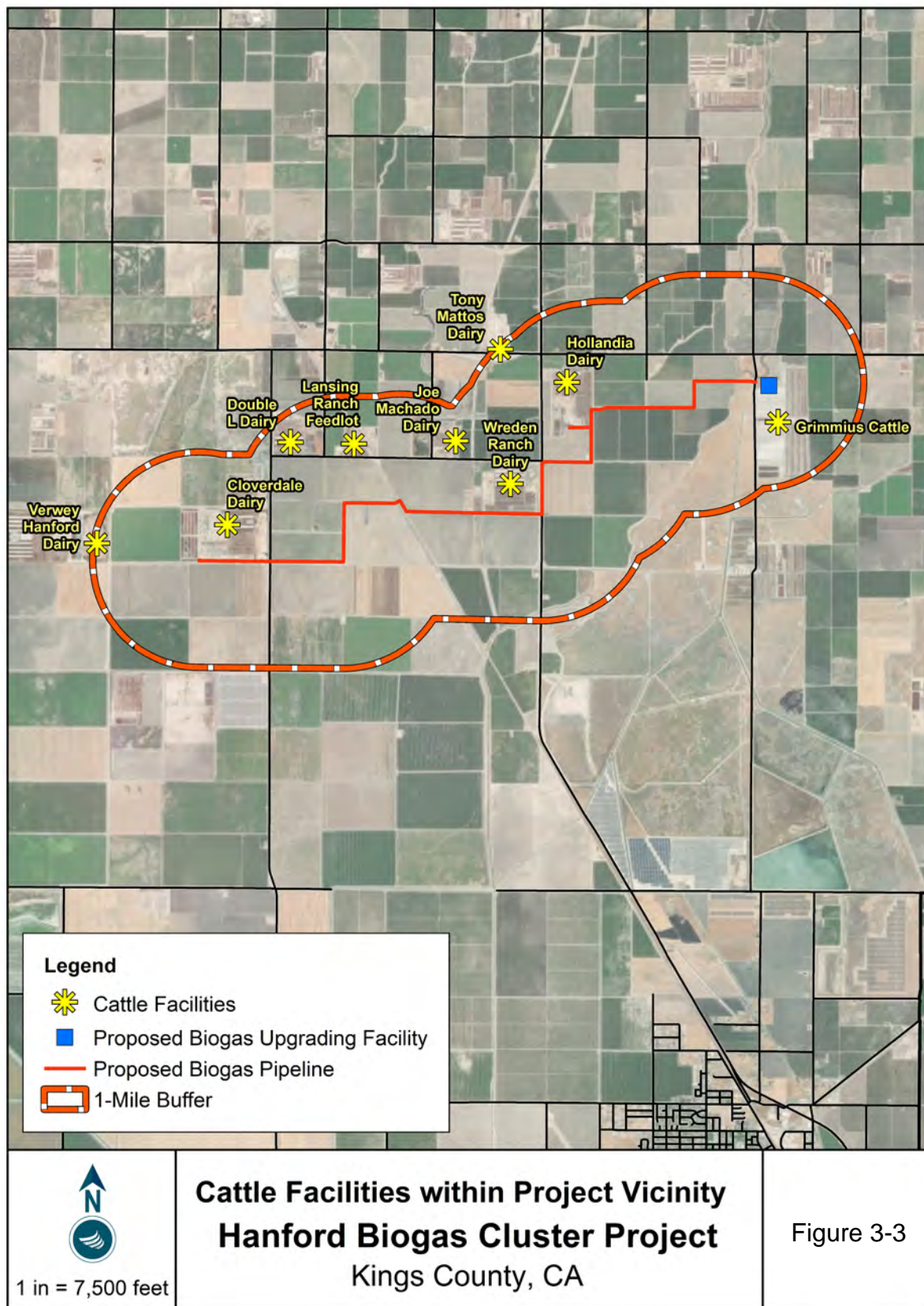


Figure 3-2. Biogas upgrading facility site plan.



3.3 Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following.
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe and mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

3.4 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|-----------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Air Quality | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input checked="" type="checkbox"/> Transportation |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Land Use/Planning | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Noise | <input type="checkbox"/> Wildfire |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency) Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION WILL BE PREPARED.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A Negative Declaration is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is requested.



SIGNATURE

11/26/19

DATE

Chuck Kinney

Kings County Community Development Agency

3.5 Environmental Analysis

The following section provides an evaluation of the impact categories and questions contained in the checklist and identify mitigation measures, if applicable.

I. AESTHETICS

| Except as provided in Public Resources Code Section 21099, would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) In non-urbanized areas, substantially degrade the existing visual character or quality public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The Open Space Element of the County General Plan identifies a number of aesthetic resources within the County.

Kettleman Hills: The Kettleman Hills is a low mountain range within the California Interior Coastal Range. The hills reach an elevation of approximately 1,200 feet and divide the San Joaquin Valley from the much smaller Kettleman Plains to the west. The proposed project is located approximately 25 miles north-east of Kettleman Hills.

The Kings River: The Kings River is approximately 125 miles in length and flows along the northern edges of the County. The seasonal flows originate from releases from Pine Flat Reservoir. The Kings River is considered to be one of the most identifiable features in the County and is the source of the County's namesake. The Kings River is approximately 15 miles west of the proposed upgrading facility and approximately 10 miles west of the western most portion of the proposed pipeline.

Cross Creek: Cross Creek is a natural waterway channel that flows through the northern half of the County. Cross Creek flows are very intermittent, as water is usually diverted for agricultural use upstream. Cross Creek intersects the proposed pipeline approximately 0.17 miles west of the proposed upgrading facility.

Scenic Highways: There are no state designated scenic highways in Kings County. A portion of SR-41, from its intersection with SR-33 through to the San Luis Obispo County line, is an eligible state scenic highway. This portion of SR-41 is located in the south-west portion of the county and is approximately 30 miles south-west of the proposed Project Site. The following photos demonstrate the aesthetic character of the project area. As shown, the proposed Project Site is located in an area dominated by agricultural land uses.



Photo 1: Biogas Upgrading Facility site
Source: Live Oak Associates, Inc.



Photo 2: Agricultural lands along proposed pipeline route
Source: Live Oak Associates, Inc.



Photo 3: View of Cross Creek at pipeline crossing
Source: Live Oak Associates, Inc.



Photo 3: Unnamed canal crossing Kansas Ave.
Source: Live Oak Associates, Inc.

Regulatory Setting

State Scenic Highways: The State Scenic Highway Program is implemented by Caltrans and was developed to preserve the aesthetic quality of certain highway corridors. Highways included in this program are designated as scenic highways. A highway is designated as scenic based on how much of the natural landscape is visible to travelers, the quality of that landscape, and the extent to which development obstructs views of the landscape.

Kings County General Plan: The Open Space Element of the 2035 Kings County General Plan includes the following objectives pertaining to aesthetic resources:

- B1.1 - Protect and enhance views from roadways which cross scenic areas or serve as scenic entranceways to cities and communities.
- B1.2 Preserve roadside landscapes which have high visual quality and contribute to the local environment.
- B1.3 Protect the scenic qualities of human-made and natural landscapes and prominent view sheds.

Discussion

a) Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact: A scenic vista is defined as a viewpoint that provides expansive views of highly valued landscape for the benefit of the general public. The Open Space Element of the County General Plan identifies three scenic vistas in Kings County- the Coastal Ranges of Kettleman Hills, the Kings River, and Cross Creek. The pipeline portion of the proposed project would be underground and would have no impact on scenic vistas. Expansion of the proposed pipeline network to other dairies would not increase this impact.

The proposed biogas upgrading facility site is located approximately 27 miles north-east of Kettleman Hills and approximately 35 miles north-east of the higher mountain terrain coastal ranges. The low profile of the proposed facilities in conjunction with the distance between the proposed facilities to the scenic mountain ranges ensures the project would not impact views of these features.

The proposed biogas upgrading facility is located approximately 16 miles east of the Kings River. The Kings River cannot be seen from the proposed Project Site so there is no impact.

Cross Creek is the nearest scenic resource to the Project Site. The proposed biogas pipeline would use directional drilling to cross Cross Creek at one location approximately 0.25 miles south of Kansas Avenue and approximately 0.15 miles west of 6th Avenue. The proposed pipeline would not impact views of Cross Creek as it would be located below the ground surface and not visible.

Cross Creek is approximately 35 feet from the proposed upgrading facility site. The only public vantage points within the vicinity of the proposed upgrading facility from which Cross Creek can be viewed are Kansas Avenue and 6th Avenue. Due to the low profile of the proposed facilities and distance between the proposed facilities and these vantage points, it is unlikely that the proposed project would significantly impact views of Cross Creek.

Because the proposed project will have a less than significant impact on Cross Creek and Kings River scenic vistas, and a less than significant impact on Kettleman Hills and Coastal Range scenic vistas, the overall adverse impact on scenic vistas is *less than significant*.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?

No Impact: The site does not contain any rock outcropping or historic buildings. After review of the state route “scenic highways” in Kings County, it was determined that there are no highways designated by State or local agencies as “Scenic highways” near the Project Site. Therefore, the proposed project would have *no impact* to any scenic resources.

- c) **In non-urbanized areas, would the project substantially degrade the existing visual character or quality public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

No Impact: The proposed Project Site is located in a non-urbanized area in east-central Kings County. The biogas pipeline portion of this project would be buried underground and hidden from view. The biogas upgrading facility would be visible from a publicly accessible vantage point (6th Avenue and Kansas Avenue). However, because the Project Site is located in a previously disturbed vacant area, the County does not anticipate that the development of the proposed project will create a visually degraded character or quality to the Project Site or to the properties near and around the Project Site. Additionally, all of the development will be required to comply with the design review and design limitations required by the General Plan and the County's Development Code which require setbacks, landscaping and designs to limit the impact to neighboring properties. The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. There is *no impact*.

- d) **Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

Less than Significant Impact: The project proposes minimal outdoor lighting and does not include any notable reflective materials that could result in impacts today or nighttime views. Additionally, it can be reasonably inferred that compliance with Section 114.A.5 of the Kings County Development Code, which states that all light and glare must be shielded or modified to prevent emissions of light or glare beyond the property line or upward into the sky, will reduce any impacts from light and glare to *less than significant* levels.

II. AGRICULTURE AND FOREST RESOURCES:

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forestland or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

As one of the agricultural counties within the Central San Joaquin Valley, agriculture is a primary driver of the Kings County economy and is a significant source of regional identity. As such, agricultural land is a highly valued resource.

The proposed project would involve construction on approximately 9 acres of agricultural land in the east central portion of Kings County. The proposed biogas upgrading facility would be located on land designated as Grazing Land by the California Farmland Mapping and Monitoring Program (FMMP). The proposed pipeline would traverse areas designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Grazing Land and Confined Animal Agriculture to connect nearby dairies to the proposed biogas upgrading facility.

Regulatory Setting

California Farmland Mapping and Monitoring Program (FMMP): The FMMP is implemented by the California Department of Conservation (DOC) to conserve and protect agricultural lands within the State. Land is included in this program based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows:

- *Prime Farmland* has the ideal physical and chemical composition for crop production. It has been used for irrigated production in the four years prior to classification and is capable of producing sustained yields.
- *Farmland of Statewide Importance* has also been used for irrigated production in the four years prior to classification and is only slightly poorer quality than Prime Farmland.
- *Unique Farmland* has been cropped in the four years prior to classification and does not meet the criteria for Prime Farmland or Farmland of Statewide Importance but has produced specific crops with high economic value.
- *Farmland of Local Importance* encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy.
- *Grazing Land* has vegetation that is suitable for grazing livestock.

Kings County General Plan: The Land Use Element and the Open Space Element of the 2035 Kings County General Plan includes the following objectives and policies pertaining to agricultural resources:

- LU Goal B1: Protect agricultural lands throughout the County, and in particular along the edges of community districts and Urban Fringe by Maintaining large parcel sizes and preventing the premature development of incompatible urban uses
- LU Goal B2: Agricultural production continues to be supported and enhanced in areas designated for agriculture, while conflicts between agriculture and nonagricultural uses are minimized
 - Land Use Objective B2.1: Agricultural production continues to be supported and enhanced in areas designated for agriculture, while conflicts between agriculture and non-agricultural uses are minimized
 - LU Policy B2.1.1: The primary use of land designated Limited Agriculture, General Agriculture, and Exclusive Agriculture shall remain devoted to agricultural uses and related support services
- Open Space Objective A1.1: Protect agricultural land as an important, sustainable component of the Kings County economy
 - Policy A1.1.1: Preserve agricultural land in open and economically sustainable sized parcels for farming and establishment of agricultural processing facilities
 - Policy A1.1.2: Recognize agricultural land as a valued open space feature within the County that promotes the economy, public welfare, and quality of life for Kings County residents

Kings County Right-to-Farm Policy: The *Kings County Code of Ordinances* Section 14-36.1, the “Notice of Disclosure and Acknowledgment of Agricultural Land Use Protection and Right to Farm Policies of the County of Kings,” (Right-to-Farm) requires the approvals of rezoning, land divisions, zoning permits, and residential building permits include a condition that notice and disclosure be provided, which is to be recorded with the property title, page that specifically acknowledges and notifies all future owners that they are in proximity to agricultural uses, and lists the types of operations and possible nuisances or inconveniences associated with farming such as equipment and animal noises; farming activities conducted on a 24-hour, 7-day a week basis; odors from manure, fertilizers, pesticides, chemicals, or other sources; the aerial and ground application of chemicals and seeds; dust; flies and other insects; and smoke. The ordinance states that the County does not consider normal farming operations involving these activities to be a nuisance, and that current owners and future purchasers should be prepared to accept such annoyances or discomfort from normal, usual, and customary agricultural operations, facilities, and

practices. This Right-to-Farm disclosure policy establishes the primacy of agricultural operations over other land uses, and reduces the potential for conflict with adjacent land uses.

Discussion

- a) **Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

No Impact: The proposed project is located on land that is designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Grazing Land and Confined Animal Agriculture; however, the proposed project will not convert these lands to nonagricultural use. Expansion of the proposed pipeline network in the future to additional dairies will also not result in the conversion of land to non-agricultural use. This is because the proposed biogas pipeline and biogas upgrading facility are intended to enhance the sustainability of existing agricultural production at participating bovine facilities. There will be no reduction in the amount of agricultural activity on areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the project has no *impact*.

- b) **Would the project conflict with existing zoning for agricultural use, or a Williamson Act Contract?**

No Impact: The Project Site is located in the AG-40 zone district. However, the proposed project will *not* conflict with this zoning. Article 4, Section 407 of the Kings County Development Code states that Table 4-1 prescribes the land use regulations for “Agricultural” districts. The regulations for each district are established by letter designation shown in the key of Table 4-1. Table 4-1 lists biomass energy facilities and projects (that can be used to make liquid biofuels) as a conditional use subject to Kings County Planning Commission approval in the General Agricultural (AG-40) zone district. Therefore, approval of a conditional use permit would be required in order for the proposed use to comply with Section 407 and Table 4-1.

The proposed biogas pipeline and upgrading facility are intended to enhance the sustainability of existing agricultural production on the three participating dairies. Portions of the Project Site are restricted by a Williamson Act contract. Portions of the site are also restricted by Farmland Security Zone contracts. The *Uniform Rules for Agricultural Preserves in Kings County* state that during the term of the contract, the only uses permitted upon the land shall be Commercial Agricultural Uses and Compatible Uses. Section A.3.d of the Uniform Rules for Agricultural Preserves in Kings County lists operation of dairies as a Commercial Agricultural Use. In addition, Section A.3.g. of the Uniform Rules for Agricultural Preserves in Kings County lists accessory structures and uses incidental to the operation of dairies as a Commercial Agricultural Use. The project would not conflict with the existing zoning for agricultural land use or a Williamson Act contract and future expansion of the proposed pipeline to other dairies would not result in conflict with existing zoning for agricultural land use or a Williamson Act contract. There is *no impact*.

- c) **Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g))?**

No Impact: The Project Site does not contain forest land, timberland or timberland zoned Timberland Production; the Project Site is not zoned for forest or timberland production; and there is no zone change proposed for the site. Additionally, future expansion of the proposed pipeline to other dairies would only be permitted on land zoned for agricultural use. Therefore, *no impacts* would occur.

- d) **Would the project result in the loss of forestland or conversion of forest land to non-forest use?**

No Impact: No loss of forest land or conversion of forestland, as defined under Public Resource Code or General Code, to non-forest use will occur as a result of the project and there would be *no impacts*.

- e) **Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?**

No Impact: As discussed in Impact Analysis II-a above, the proposed project does not convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance (Farmland) to non-agricultural use. As discussed in Impact Analysis II-c above, the Project Site is not located in the vicinity of forestland; therefore, the proposed project would not convert forest land to non-forest use. *Thus, no impact* would occur.

III. AIR QUALITY

| Where available, the significance criteria established by the applicable air quality management district of air pollution control district may be relied upon to make the following determinations. Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

Air pollution is directly related to regional topography. Topographic features can either stimulate the movement of air or restrict air movement. California is divided into regional air basins based on topographic air drainage features. The proposed Project Site is within the San Joaquin Valley Air Basin, which is bordered by the Sierra Nevada Mountains to the east, Coastal Ranges to the west, and the Tehachapi Mountains to the south.

The mountain ranges surrounding the San Joaquin Valley Air Basin (SJVAB) serve to restrict air movement and prevent the dispersal of pollution. As a result, the SJVAB is highly susceptible to pollution accumulation over time. As shown in the Table 3-1, the SJVAB is in nonattainment for several pollutant standards.

Valley Fever: Valley Fever is an illness caused by a fungus (*Coccidioides immitis* and *C. posadasii*) that grows in soils under certain conditions. Favorable conditions for the Valley Fever fungus include low rainfall, high summer temperatures, and moderate winter temperatures. In California, the counties with the highest incident of Valley Fever are Fresno, Kern and Kings Counties. When soils are disturbed by wind or activities like construction and farming, Valley Fever fungal spores can become airborne. The spores present a potential health hazard when inhaled. Individuals in occupations such as construction, agriculture, and archaeology have a higher risk of exposure due to working in areas of disturbed soils which may have the Valley Fever fungus.

| Pollutant | Designation/Classification | |
|-------------------------------|------------------------------------|-------------------------|
| | Federal Standards | State Standards |
| Ozone - One hour | No Federal Standard ^f | Nonattainment/Severe |
| Ozone - Eight hour | Nonattainment/Extreme ^e | Nonattainment |
| PM 10 | Attainment ^c | Nonattainment |
| PM 2.5 | Nonattainment ^d | Nonattainment |
| Carbon Monoxide | Attainment/Unclassified | Attainment/Unclassified |
| Nitrogen Dioxide | Attainment/Unclassified | Attainment |
| Sulfur Dioxide | Attainment/Unclassified | Attainment |
| Lead (Particulate) | No Designation/Classification | Attainment |
| Hydrogen Sulfide | No Federal Standard | Unclassified |
| Sulfates | No Federal Standard | Attainment |
| Visibility Reducing Particles | No Federal Standard | Unclassified |
| Vinyl Chloride | No Federal Standard | Attainment |

^a See 40 CFR Part 81
^b See CCR Title 17 Sections 60200-60210
^c On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
^d The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).
^e Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
^f Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Table 3-1. San Joaquin Valley Attainment Status; Source: SJVAPCD

Regulatory Setting

Federal Clean Air Act - The 1977 Federal Clean Air Act (CAA) authorized the establishment of the National Ambient Air Quality Standards (NAAQS) and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and an attainment demonstration, and incorporates more stringent sanctions for failure to meet interim milestones. The U.S. EPA is the federal agency charged with administering the Act and other air quality-related legislation. EPA's principal function includes setting NAAQS; establishing minimum national emission limits for major sources of pollution; and promulgating regulations. Under CAA, the NCCAB is identified as an attainment area for all pollutants.

California Clean Air Act - California Air Resources Board coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, California Air Resources Board monitors existing air quality, establishes California Ambient Air Quality Standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by air pollution control and management districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The project is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

The state and federal standards for the criteria pollutants are presented in Section 8.4 of The San Joaquin Valley Unified Air Pollution Control District's 2015 "Guidance for Assessing and Mitigating Air Quality Impacts" (see Table 3-2, below). These standards are designed to protect public health and welfare. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility, materials, vegetation and other aspects of general welfare. The U.S. EPA revoked the national 1-hour

ozone standard on June 15, 2005, and the annual PM₁₀ standard on September 21, 2006, when a new PM_{2.5} 24-hour standard was established.

| Pollutant | Averaging Time | California Standards ¹ | | National Standards ² | | |
|--------------------------------------------------------|------------------------|---------------------------------------|-------------------------------------------|-----------------------------------------------|--------------------------------------|---------------------------------------------------------------------|
| | | Concentration ³ | Method ⁴ | Primary ^{3,5} | Secondary ^{3,6} | Method ⁷ |
| Ozone (O₃) | 1 Hour | 0.09 ppm (180 µg/m ³) | Ultraviolet Photometry | -- | Same as Primary Standard | Ultraviolet 8 Hour Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m ³) | | 0.075 ppm (147 µg/m ³) | | |
| Respirable Particulate Matter (PM₁₀) | 24 Hour | 50 µg/m | Gravimetric or Beta Attenuation | 150 µg/m ³ | Same as Primary Standard | Inertial Separation and Gravimetric Annual Analysis |
| | Annual Arithmetic Mean | 20 µg/m ³ | | -- | | |
| Fine Particulate Matter (PM_{2.5}) | 24 Hour | | Gravimetric or Beta Attenuation | 35 µg/m ³ | Same as Primary Standard | Inertial Separation and Gravimetric Annual Analysis |
| | Annual Arithmetic Mean | 12 µg/m ³ | | 15 µg/m ³ | | |
| Carbon Monoxide (CO) | 1 Hour | 20 ppm (23 mg/m ³) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 mg/m ³) | -- | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10 mg/m ³) | | 9 ppm (10 mg/m ³) | -- | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m ³) | | -- | -- | |
| Nitrogen Dioxide (NO₂)⁸ | 1 Hour | 0.18 ppm (339 µg/m ³) | Gas Phase Chemiluminescence | 100 ppb (188 µg/m ³) | -- | Gas Phase Annual Chemiluminescence |
| | Arithmetic Mean | 0.030 ppm (57 µg/m ³) | | 53 ppb (100 µg/m ³) | Same as Primary Standard | |
| Sulfur Dioxide | 1 Hour | 0.25 ppm (655 µg/m ³) | Ultraviolet Fluorescence | 75 ppb (196 µg/m ³) | -- | Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) |
| | 3 Hour | -- | | -- | 0.5 ppm (1300 µg/m ³) | |
| | 24 Hour | 0.04 ppm (105 µg/m ³) | | 0.14 ppm (for certain areas) ⁹ | -- | |
| | Annual Arithmetic Mean | -- | | 0.030 ppm (for certain areas) ⁹ | -- | |
| Lead^{10,11} | 30 Day Average | 1.5 µg/m ³ | Atomic Absorption | -- | -- | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | -- | | 1.5 µg/m ³ (for | Same as Primary Standard | |

| Pollutant | Averaging Time | California Standards ¹ | | National Standards ² | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------|--------------------------------------------------------|---------------------------------|--------------------------|---------------------|
| | | Concentration ³ | Method ⁴ | Primary ^{3,5} | Secondary ^{3,6} | Method ⁷ |
| | | | | certain areas) ¹¹ | | |
| | Rolling 3-Month Average | -- | | 0.15 µg/m ³ | | |
| Visibility Reducing Particles ¹² | 8 Hour | See footnote 12 | Beta Attenuation and Transmittance through Filter Tape | No National Standard | | |
| Sulfates | 24 Hour | 25 µg/m ³ | Ion Chromatography | | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m ³) | Ultraviolet Fluorescence | | | |
| Vinyl Chloride ¹⁰ | 24 Hour | 0.01 ppm (26 µg/m ³) | Gas Chromatography | | | |
| <div>1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.</div> <div>2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.</div> <div>3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.</div> <div>4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.</div> <div>5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.</div> <div>6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.</div> <div>7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.</div> <div>8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.</div> <div>9. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.</div> <div>10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.</div> <div>11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.</div> <div>12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.</div> | | | | | | |

Table 3-2. Ambient Air Quality Standards; Source: SJVAPCD

San Joaquin Valley Air Pollution Control District (SJVAPCD) – The SJVAPCD is responsible for enforcing air quality standards in the project area. To meet state and federal air quality objectives, the SJVAPCD adopted the following thresholds of significance for projects:

| Pollutant/Precursor | Construction Emissions | Operational Emissions | |
|---------------------|------------------------|------------------------------------|----------------------------------------|
| | | Permitted Equipment and Activities | Non-Permitted Equipment and Activities |
| | Emissions (tpy) | Emissions (tpy) | Emissions (tpy) |
| CO | 100 | 100 | 100 |
| NOx | 10 | 10 | 10 |
| ROG | 10 | 10 | 10 |
| SOx | 27 | 27 | 27 |
| PM10 | 15 | 15 | 15 |
| PM2.5 | 15 | 15 | 15 |

Table 3-3. SJVAPCD Thresholds of Significance for Criteria Pollutants; Source: SJVAPCD

Rule 9510: The Indirect Source Review (ISR) program is implemented by the SJVAPCD to reduce NOx and PM10 emissions from new development projects. Emissions are reduced by requiring specific design elements or off-site mitigation fees. The program requires developers of larger residential, commercial, and industrial projects to reduce smog-forming and particulate emissions generated by their projects. If a project is subject to ISR, the project applicant is required to submit an Air Impact Assessment to the SJVAPCD. A project is exempt from ISR if the project's primary functions are subject to Rule 2201.

Rule 2201: Rule 2201 was developed to review new and modified Stationary Sources of air pollution and to provide emissions trade-offs, by which Authorities to Construct such sources may be granted. The Rule applies to all new stationary sources and all modifications of existing stationary sources that are subject to District permit requirements and may emit one or more affected pollutant. It was determined in conversations with representatives of the SJVAPCD that the proposed project is subject to Rule 2201 and thus exempt from ISR. Under Rule 2201, an Authority to Construct/Permit to Operate is required to construct and operate certain equipment. An Authority to Construct/Permit to Operate will be required for the following equipment:

- Thiopaq (or equivalent) wet scrubber h2s removal system consisting of wet caustic h2s Scrubber with a bioreactor and sulfur separator,
- Iron media scrubbers for h2s removal,
- Product gas scrubber,
- Compressors,
- Wet scrubber co2 removal system or membrane co2 removal system,
- Flashing vessel co2 and h2s stripping vessel,
- Electrically heated thermal swing adsorption (tsa) gas drier and purifier activated carbon adsorption,
- Vacuum pressure swing adsorption (vpsa) gas polishing system,
- 45 mm btu/hr zule or equivalent ultra-low emission enclosed emergency biogas flare

Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact: The proposed project is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and would result in air pollutant emissions that are regulated by the air district during both its construction and operational phases. The SJVAPCD is responsible for bringing air quality in Kings County into compliance with federal and state air quality standards. The air district has Particulate Matter (PM) plans, Ozone Plans, and Carbon Monoxide Plans that serve as the clean air plan for the basin.

Together, these plans quantify the required emission reductions to meet federal and state air quality standards and provide strategies to meet these standards. The air basin is currently in nonattainment for the state eight-hour ozone, PM 10 standards, and PM 2.5 standards, and in nonattainment for the federal eight-hour ozone and PM 2.5 standards. The air basin is in severe nonattainment for the state one-hour ozone and extreme nonattainment for the federal eight-hour ozone.

A project is considered to be compliant with SJVAPCD Air Quality Control Plans if the project-generated emissions are below the SJVAPCD's significance thresholds.

Construction Phase. Project construction will involve installation of the proposed 7.3-mile biogas pipeline and construction of the proposed upgrading facility. Construction related emissions were estimated using CalEEMod. The full CalEEMod Report can be found in Appendix A. As shown in Table 3-4 below, the project construction related emissions do not exceed the thresholds established by the SJVAPCD.

| | CO (tpy) | ROG (tpy) | SOx (tpy)* | NOx (tpy) | PM10 (tpy) | PM2.5 (tpy) |
|-----------------------------------------------------------------------------------------------|---------------|---------------|----------------|---------------|---------------|---------------|
| Project Construction | 1.2395 | 0.2304 | 0.00226 | 2.3051 | 1.5034 | 0.8646 |
| SJVAPCD Air Quality Thresholds of Significance | 100 | 10 | 27 | 10 | 15 | 15 |
| *Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod. | | | | | | |

Table 3-4. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Construction; Source: SJVAPCD, CalEEMod Analysis (Appendix A)

Operational Phase. The proposed project involves a number of components that require Air District Permits. These project components and applicable Air District Rules are described below. It should be noted that this list is not exhaustive, and the project will comply with all applicable air quality regulations.

H2S Scrubber: Biogas contains hydrogen sulfide that must be removed from the gas stream to meet SJVAPCD requirements for H2S control. Combustion of H2S emissions

would produce a toxic criteria pollutant, Sulfur dioxide (SO₂). Air District Rule 4320 is designed to control SO₂ emissions from these sources. Thus, compliance with SJVAPCD APCD Rule 4320 would address this potential emissions source.

Emergency Flare: Emergency flares are used to combust excess gas to prevent build-up of gas pressure. The flare is subject to SJVAPCD rules and regulations and would be required to meet SJVAPCD Best Available Control Technology (BACT) requirements for pollutants the BACT threshold of 2 pounds per day of any criteria pollutant. Air District Rule 4311 is designed to control VOC, NO_x, and SO₂ emissions from flares. Therefore, compliance with SJVAPCD Rule 4311 would address this potential emissions source.

Because emissions from project construction are below the thresholds of significance established by the SJVAPCD, and compliance with SJVAPCD rules and regulations will address any significant impacts related to operational emissions, the project would not conflict with an applicable air quality plan and the impact is *less than significant*.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact: The SJVAPCD accounts for cumulative impacts to air quality in Section 1.8 “Thresholds of Significance – Cumulative Impacts” in its 2015 Guide for Assessing and Mitigating Air Quality Impacts. The SJVAPCD considered basin-wide cumulative impacts to air quality when developing its significance thresholds. Because construction emissions are below the significance thresholds adopted by the air district, and compliance with SJVAPCD rules will address any cumulative impacts regarding operational emissions, impacts regarding cumulative emissions would be *less than significant*.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact with Mitigation Incorporation: A sensitive receptor is defined as a facility or land uses that includes members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas. There are no nearby hospitals or schools, but there are seven agricultural residences located within ½ mile of the proposed Project Site. The nearest residence is approximately 1,500 feet from the proposed Project Site. Emissions generated during construction and operation of the proposed project will be regulated by the SJVAPCD to ensure impacts to any sensitive receptors remain less than significant.

The proposed project would also result in disturbance of soils, which could expose construction workers to Valley Fever fungal spores. This impact needs to be addressed and mitigated. The following mitigation is suggested for reducing exposure of the public and workers from Valley Fever spores during ground disturbing activities:

Mitigation Measure AIR-1: Implement the Dust Control Plan required to be approved for the project by the San Joaquin Valley Air Pollution District under District Rule 8021 prior to ground disturbing activity

Mitigation Measure AIR-2: When exposure to dust is unavoidable for workers who will be disturbing the top 2-12 inches of soil, provide workers with NIOSH-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or HEPA, as recommended in the California Department of Public Health publication “*Preventing Work-Related Coccidioidomycosis (Valley Fever)*.”

Because the proposed project will comply with all thresholds and regulations established by the SJVAPCD, the impact would be *less than significant with mitigation incorporated*.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact: The potential sources of odor include dairy manure and the food waste feedstock. However, the dairies involved in the proposed project are an existing source of dairy manure odors and odor is not expected to increase as a result of project implementation.

Manure management at dairies without incorporation of digester facilities typically involves flushing or scraping manure into onsite storage ponds or stockpiles. Manure in storage ponds and stockpiles would naturally undergo anaerobic decomposition, and as a result, odorous compounds are released into the surrounding environment. In contrast, the proposed project would gather gas from dairy digesters and would keep it in an enclosed environment while the gas is cleaned and injected into an existing natural gas pipeline. The enclosed environment would not permit odors to escape.

The project would result in typical construction odors during the construction phase. However, any odors generated from project construction would be temporary and common to any construction activity. Additionally, construction odors would not affect a substantial number of people, as the Project Site is in a rural area and there are only seven agricultural residences within one-half mile of the Project Site.

Because odors generated during project construction would be temporary, relatively insignificant, and would not affect a substantial number of people, and operation of the proposed project would not create objectionable odors, the impact is *less than significant*.

IV. BIOLOGICAL RESOURCES

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Have a substantial adverse effect on state or federally protected wet-lands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion for this section originates from the Biological Evaluation that was prepared for this project by Live Oak Associates, Inc. to identify sensitive biological resources, provide project impact analysis, and suggest mitigation measures. The full document can be found in Appendix B.

Environmental Setting

Regional Setting: The Project Site is located in the southern San Joaquin Valley between the City of Hanford and the City of Corcoran. The valley is bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coastal ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Like most of California, the southern San Joaquin Valley (and the Project Site) experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures

commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation in the vicinity of the project is about 9 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The principal drainage of the project vicinity is Cross Creek, which intersects the proposed pipeline alignment south of Kansas Avenue and west of 6th Avenue. Cross Creek historically flowed into Tulare Lake, which encompassed many square miles, including a portion of the Project Site. These two water bodies once contained large areas of riparian, wetland, and aquatic ecosystems that supported large populations of diverse native plants and animals. Presently, Tulare Lake is extinct and the area largely utilized for agriculture. Cross Creek supports only a fraction of the riparian habitat it once supported, and its aquatic habitat has been greatly degraded from agricultural runoff and irregular flows.

The Project Site is situated within a matrix of agricultural lands dominated by dairy operations.

Biotic Habitats/Land Uses: The Project Site encompasses four land use types: ruderal, non-native grassland, fallow agricultural field, and waterway. An aerial photo with the project layout is presented in Figure 3 of the Biological Report (Appendix B) that broadly illustrates the land uses on the Project Site and vicinity. These land uses and their constituent plant and animal species are described in more detail below. A list of the vascular plant species observed within the Project Site and the terrestrial vertebrates using, or potentially using, the site's habitats are provided in Appendices A and B of the Biological Report (Appendix B), respectively.

Ruderal: Ruderal (disturbed) areas consist of roads, road margins, and other areas of the Project Site characterized by paved or compacted dirt surfaces and high levels of disturbance. At the time of the field surveys, ruderal areas of the Project Site were barren or sparsely vegetated with common weed species such as foxtail barley (*Hordeum murinum* ssp. *leporinum*), common purslane (*Portulaca oleracea*), flax-leaved horseweed (*Erigeron bonariensis*), Bermuda grass (*Cynodon dactylon*), alkali mallow (*Malvella leprosa*), and spotted spurge (*Euphorbia maculata*), among others.

Although the wildlife habitat value of the Project Site's ruderal lands is relatively low, these lands could be utilized by limited numbers of some wildlife species. Amphibians such as the Sierran tree frog (*Pseudacris sierra*) and western toad (*Bufo boreas*) may breed in nearby irrigation ditches and canals and subsequently disperse through the site's ruderal areas, potentially taking refuge in small mammal burrows or other refugia located in this land use type. Reptiles that could occur in the site's ruderal areas include the side-blotched lizard (*Uta stansburiana*), Pacific gopher snake (*Pituophis catenifer catenifer*), and common kingsnake (*Lampropeltis getulus*).

Common avian resident species likely to occasionally forage in these areas of the Project Site include mourning doves (*Zenaidura macroura*), house sparrows (*Passer domesticus*), and American crows (*Corvus brachyrhynchos*). Winter migrants that would be common on ruderal lands of the Project Site include the savannah sparrow (*Passerella sandwichensis*), American pipit (*Anthus rubescens*), and white-crowned sparrow (*Zonotrichia leucophrys*), while common summer migrants would include the western kingbird (*Tyrannus verticalis*). The killdeer (*Charadrius vociferous*) may also occur here and often nests on gravel or bare ground.

Small mammals that would be expected to occur on ruderal lands of the Project Site include California ground squirrels (*Otospermophilus beecheyi*), Botta's pocket gophers (*Thomomys bottae*), deer mice (*Peromyscus maniculatus*), California voles (*Microtus californicus*), and house mice (*Mus musculus*). In fact, a number of California ground squirrel burrows were observed in the site's ruderal areas at the time of the field survey. Mammalian predators with the potential to occur on ruderal lands of the Project Site include disturbance-tolerant species such as the raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*).

Non-Native Grassland: The proposed pipeline alignment traverses approximately 400 feet of previously disturbed nonnative grassland habitat between Cross Creek and the Lakeland Canal, west of Avenue 6. Past disturbance to this grassland appears to have consisted of scraping, mowing, and or disking, as evidenced from historic aerial photography. At the time of the July 2019 survey, this area was dominated by non-native grasses and forbs including foxtail barley, riggut (*Bromus diandrus*), and red-stemmed filaree (*Erodium cicutarium*). Native forbs such as common tarweed (*Centromadia pungens*), and fiddleneck (*Amsinckia* sp.) were also found in the grassland habitat.

Reptiles and amphibians occurring in the site's grassland habitat would include those discussed for ruderal areas. The site's grasslands provide high-quality foraging habitat for a variety of birds, including residents such as western meadowlarks (*Sturnella neglecta*) and mixed flocks of Brewer's blackbirds (*Euphagus cyanocephalus*), brown-headed cowbirds (*Molothrus ater*), and European starlings (*Sturnus vulgaris*); summer migrants such as western kingbirds; and winter migrants such as savannah sparrows and American pipits. Raptors likely to forage in the site's grassland habitat include the red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), burrowing owl (*Athene cunicularia*), and during the breeding season, the Swainson's hawk (*Buteo swainsoni*). Northern harriers also have the potential to use the site's grasslands for nesting, and burrowing owls could nest or roost in this habitat type where small mammal burrows are present. The site's grassland habitat could also be used for nesting by the western meadowlark, horned lark (*Eremophila alpestris*), and mourning dove.

Small mammals occurring in the site's grassland habitat would be those discussed for ruderal lands, with the likely addition of the western harvest mouse (*Reithrodontomys megalotis*) and Audubon's cottontail (*Sylvilagus audubonii*). Various species of bat could forage for flying insects over the grasslands. Mammalian predators occurring in the site's grassland habitat would include the striped skunk (*Mephitis mephitis*), coyote, and red fox.

Fallow Agricultural Field: The proposed biogas upgrading facility is situated in an area that at the time of the July 2019 survey could best be characterized as a fallow agricultural field. Historic aerial photos reveal that this area has experienced regular agricultural related disturbance since at least 1994. At the time of the survey, a large barrow pit was present at the western end of the field and weedy herbaceous vegetation covered the entire area. This field contained common weeds such as peregrine saltbush (*Atriplex suberecta*), prickly lettuce (*Lactuca serriola*), pigweed amaranth (*Amaranthus albus*), cheeseweed mallow (*Malva parviflora*), London rocket (*Sisymbrium irio*), puncturevine (*Tribulus terrestris*), and foxtail barley, among others.

Intensive past agricultural practices within this area of the site has reduced the value of this habitat for wildlife; however, some wildlife species undoubtedly occur in the fields. Reptile and

amphibian use of the fields would likely be similar to that described for ruderal lands. Birds expected to forage within the site's fallow agricultural field include the Brewer's blackbird, European starling, mourning dove, and Eurasian collared dove (*Streptopelia decaocto*). The field may be used for nesting from time to time by mourning doves and western meadowlarks. All of the raptors discussed for non-native grassland habitat would be expected to forage in the site's fallow agricultural field from time to time, and the northern harrier could potential nest in the field.

Small mammals such as deer mice and California voles would occur in the site's fallow agricultural field in fluctuating numbers depending on the season and maintenance practices. Botta's pocket gophers and California ground squirrels could burrow within the field. Various species of bat may also forage over the field for flying insects. Mammalian predators occurring in the site's fallow agricultural field from time to time would include disturbance-tolerant species such as raccoons, striped skunks (*Mephitis mephitis*), coyotes, and red foxes.

Waterway: The pipeline alignment intersects several irrigation canals and Cross Creek. All the canals are earthen channels. Most of the canals are approximately 20 to 40 feet in width and supported scant vegetation, consisting of common weeds such as sprangletop (*Leptochloa fusca*), annual bluegrass (*Poa annua*), and flax-leaved horseweed. The Lakeland Canal is a large canal approximately 75 feet in width that carries water diverted from Cross Creek. The portion of this canal within the project alignment contained a greater diversity of plant species than the other canals, which consisted of tree-tobacco (*Nicotiana glauca*), common gumplant (*Grindelia camporum*), common sunflower (*Helianthus annua*), stinging nettle (*Urtica dioica*), and rough cocklebur (*Xanthium strumarium*), among others. Cross Creek within the Project Site is approximately 162 feet in width at top-of-bank. It is characterized by a sandy bottom mostly barren of vegetation and banks that, at the time of the surveys, were densely vegetated with common grasses and forbs such as mugwort (*Artemisia douglasiana*), black mustard (*Brassica nigra*), Canada horseweed (*Erigeron canadensis*), yellow monkey flower (*Erythranthe guttata*), common sunflower, and rough cocklebur, among others. Riparian trees and shrubs are absent from Cross Creek at the pipeline crossing location, except one small common buttonbush (*Cephalanthus occidentalis*).

Due to intensive maintenance practices and lack of cover, on-site canals would be of limited value to native wildlife. Cross Creek and, to a lesser extent, Lakeland Canal may be of somewhat higher value because these waterways do not appear to be as frequently maintained. However, the lack of riparian habitat would limit the number of species expected to occur here. Sierran tree frogs and western toads may breed in onsite waterways, and the non-native American bullfrog (*Lithobates catesbeianus*) and mosquitofish (*Gambusia affinis*) may occur in waterways with prolonged inundation. These and other prey species may attract wading birds such as the great blue heron (*Ardea herodias*) and great egret (*Ardea alba*). Shorebirds such as the greater yellowlegs (*Tringa melanoleuca*), least sandpiper (*Calidris minutilla*), and killdeer may also occur in or adjacent to these waterways from time to time. Black phoebes (*Sayornis nigricans*) and cliff swallows (*Petrochelidon pyrrhonota*) may extract mud from the banks of onsite waterways for nest-building, and phoebes may also glean insects from areas over the water surface.

The banks of onsite waterways provide habitat for burrowing rodents such as the California ground squirrel. At the time of the field surveys, California ground squirrel burrows were prevalent along several of the on-site canals. Where California ground squirrel burrows are

present, the banks of these waterways may be used for nesting and roosting by burrowing owls. In fact, several canals along the pipeline alignment were found to support burrowing owls. Coyotes may utilize the canal and creek banks for denning, as evidenced by a few very large burrows dug into the inner banks of one of the canals. Raccoons may utilize the canals and creek for foraging.

Special Status Plants and Animals: Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2 of the Biological Report (Appendix B), state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as “threatened” or “endangered” under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as “special status species.”

A number of special status plants and animals occur in the project vicinity (Figures 4 and 5 of the Biological Report (Appendix B)). These species, and their potential to occur on the site, are listed in Table 2 of the Biological Report (Appendix B). Sources of information for this table included California’s Wildlife, Volumes I, II, and III (Zeiner et. al 1988), California Natural Diversity Data Base (CDFW 2019), The Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998), eBird.org, The Jepson Manual: Vascular Plants of California, second edition (Baldwin et al 2012), the on-line version of California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California (CNPS 2019), and Calflora.org.

A search of published accounts for all of the relevant special status plant and animal species was conducted for the twelve USGS 7.5-minute quadrangles containing and immediately surrounding the Project Site (Guernsey, Waukena, Lemoore, Hanford, Remnoid, Goshen, Paige, Taylor Weir, Corcoran, El Rico Ranch, Stratford SE, and Stratford) using the California Natural Diversity Data Base (CNDDDB) Rarefind 5 program (CDFW 2019). It is important to note that the CNDDDB is a volunteer database; therefore, it may not contain all known literature records.

Regulatory Setting

Federal Endangered Species Act (FESA) - defines an *endangered species* as “any species or subspecies that is in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as “any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”

Clean Water Act - Section 404 of the Clean Water Act of (1972) is to maintain, restore, and enhance the physical, chemical, and biological integrity of the nation’s waters. Under Section 404 of the Clean Water Act, the US Army Corps of Engineers (USACE) regulates discharges of dredged and fill materials into “waters of the United States” (jurisdictional waters). Waters of the US including navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any

of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

California Endangered Species Act (CESA) – prohibits the take of any state-listed threatened and endangered species. CESA defines *take* as “any action or attempt to hunt, pursue, catch, capture, or kill any listed species.” If the proposed project results in a take of a listed species, a permit pursuant to Section 2080 of CESA is required from the CDFG.

Kings County General Plan: The Resource Conservation Element of the 2035 Kings County General Plan includes the following objectives pertaining to biological resources:

- Resource Conservation Objective D1.1 Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.
- Resource Conservation Objective D2.1 Maintain compatible land uses in natural wetland habitats designated by state and federal agencies.
- Resource Conservation Objective D3.1 Ensure that, in development decisions affecting riparian environments, the conservation of fish and wildlife habitat and the protection of scenic qualities are balanced with other purposes representing basic health, safety, and economic needs.
- Resource Conservation Objective E1.1 Require mitigation measures to protect important plant and wildlife habitats.
- Resource Conservation Objective F1.1 Protect freshwater recreational fishing along the Kings River and the California Aqueduct by balancing agricultural and development needs with the protection of these resources.

Discussion

In the event that the proposed pipeline network is expanded in the future to connect additional dairies to the proposed biogas upgrading facility, all mitigation measures discussed below will be required. A separate biological assessment may also be required if the extension is located outside of the biological study area.

- a) **Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?**

Less than Significant Impact with Mitigation Incorporation: Based on the existing conditions of the Project Site and vicinity, there is potential for a variety of special status species to occur on the Project Site (See Table 1 and Table 2 of Appendix B). Implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-2a, BIO-2b, BIO-2c, BIO-3a, BIO-3b, BIO-3c, BIO-3d, BIO-3e, BIO-4a, BIO-4b, BIO-4c, BIO-5a, BIO-5b, and BIO-5c will ensure that impacts to species identified as a candidate, sensitive, or special status will be *less than significant with mitigation incorporation*.

Tipton Kangaroo Rat

West of Avenue 6 and east of Cross Creek, the proposed pipeline alignment passes through approximately 400 feet of non-native grassland habitat potentially suitable for the Tipton

kangaroo rat. Approximately 0.09 acres of this habitat is contained within the site. This habitat is proposed for temporary impacts only, as the pipeline will be installed below-ground and surface habitats will be allowed to return to pre-project conditions following installation.

Although this habitat may be temporarily unavailable to the Tipton kangaroo rat during construction, should they occur on site, it is at the northern end of approximately 3,000 acres of contiguous grasslands. Given the abundance of alternative habitat adjoining the Project Site, Tipton kangaroo rats are not expected to be substantially affected by the possible temporary loss of 0.09 acres of grassland habitat.

However, if Tipton kangaroo rats are present in this 0.09-acre area at the time of construction, individuals would be at risk of construction-related injury or mortality. The Tipton kangaroo rat is listed as endangered under both the federal and state Endangered Species Acts. Unauthorized take of the Tipton kangaroo rat would violate the FESA and CESA and be considered a significant impact of the project under CEQA.

Mitigation Measures for Tipton Kangaroo Rat: The following measures will be implemented for the protection of the Tipton kangaroo rat.

Mitigation Measure BIO-1a: Burrow Avoidance. In the absence of adequate surveys to determine Tipton kangaroo rat presence or absence, the project will observe a minimum 50-foot no-disturbance buffer around all small mammal burrows in grassland habitat.

Mitigation Measure BIO-1b: Tipton Kangaroo Rat Surveys. If burrow avoidance is not feasible, focused protocol-level trapping surveys will be conducted by a qualified wildlife biologist that has been issued the appropriate permits by CDFW and USFWS to determine if Tipton kangaroo rats occur within the non-native grassland habitat of the Project Site. These surveys will be conducted in accordance with USFWS 2013 Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats well in advance of ground-disturbing activities.

Mitigation Measure BIO-1c: Take Authorization. If the Tipton kangaroo rat is identified during the protocol-level surveys, the project applicant will consult with CDFW and USFWS to determine if take can be avoided. If take cannot be avoided, the project applicant will obtain Incidental Take Authorization from CDFW and USFWS before initiating any project activities in the non-native grassland habitat.

Implementation of these measures will reduce potential project impacts to the Tipton kangaroo rat to a less than significant level under CEQA and ensure compliance with state and federal laws protecting this species.

Swainson's Hawk

Potential nesting habitat for the Swainson's hawk is absent from the Project Site itself, but suitable nest trees occur on adjacent lands. If individuals of this species are nesting adjacent to the site at the time of construction, they could be disturbed by project activities such that they would abandon their nest(s). Project activities that adversely affect the nesting success of Swainson's hawks would violate state and federal laws (see Sections 3.2.4 to 3.2.6) and be considered a significant impact under CEQA.

The project will be constructed primarily within ruderal areas unsuitable for Swainson's hawk foraging. However, the project will temporarily disturb approximately 0.09 acres of non-native grassland habitat and permanently remove approximately 1.7 acres of fallow agricultural field, either of which could be used by foraging Swainson's hawks during the breeding season. Although temporarily disturbed areas of grassland will be unavailable to Swainson's hawks during construction, these areas will return to pre-project conditions following project completion and are expected to assume their former level of suitability for this species. The project will result in the permanent loss of 1.7 acres of potential Swainson's hawk foraging habitat. However, the permanent loss of 1.7 acres represents only a tiny fraction of available foraging habitat in the project vicinity in the form of approximately 3,000 acres of non-native grassland adjoining the project site and many square miles of agricultural fields. For the reasons stated above, project-related loss of habitat for the Swainson's hawk is considered less than significant under CEQA.

Mitigation Measures for Swainson's Hawk: To avoid and minimize the potential for construction-related mortality/disturbance of nesting Swainson's hawks, the following measures adapted from the Swainson's Hawk Technical Advisory Committee (SHTAC) 2000 Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley will be implemented.

Mitigation Measure BIO-2a: Construction Timing. In order to avoid impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside the nesting season, conservatively defined as February 1-September 15.

Mitigation Measure BIO-2b: Preconstruction Surveys. If project-related activities must occur between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for active Swainson's hawk nests within ½ mile of the site in accordance with the SHTAC (2000) guidelines. The guidelines define five survey periods for Swainson's hawk: Period I: January 1-March 20; Period II: March 20-April 5; Period III: April 5-April 20; Period IV: April 21-June 10; and Period V: June 10-July 30. The guidelines prescribe a minimum of three surveys per survey period for at least the two survey periods immediately prior to a project's initiation, and specifically recommend that surveys be completed in Periods II, III, and V. Consistent with CDFW recommendations, an additional take avoidance survey for the Swainson's hawk will be conducted no more than 10 days prior to the start of construction.

Mitigation Measure BIO-2c: Avoidance of Active Nests. Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established based on local conditions and species biology. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will reduce potential project impacts to the Swainson's hawk to a less than significant level under CEQA, and will ensure compliance with state laws protecting this species.

San Joaquin Kit Fox

Although there are only two modern occurrences of the San Joaquin kit fox (SJKF) in the project vicinity, the SJKF is a wide-ranging species, and individuals may occasionally pass through or forage or den on the Project Site. If a kit fox were present at the time of construction, then it would be at risk of project-related injury or mortality. Kit fox mortality as a result of project activities would violate the state and federal Endangered Species Acts, and is considered a potentially significant impact under CEQA.

Installation of the proposed biogas pipeline will temporarily disturb lands that could occasionally be used by the kit fox. Following pipeline construction, all such areas will return to pre-project conditions and are expected to assume their former level of suitability for this species. Permanent project impacts will be limited to an approximate 1.7-acre area of the onsite fallow agricultural field that has been subjected to considerable disturbance from agricultural activity for decades. This area is of moderate value for SJKF due to periodic disturbance and the dense growth of weedy vegetation in this area at the time of the July 2019 field survey. A large amount of alternative habitat will remain available to locally occurring SJKF during construction, as the alignment passes through the northern end of an approximate 3,000-acre contiguous block of grassland habitat. For these reasons, project-related loss of potential SJKF habitat is considered less than significant under CEQA.

Mitigation Measures for San Joaquin Kit Fox: To avoid and minimize the potential for project-related injury or mortality of the SJKF the following measures adapted from the U.S. Fish and Wildlife Service 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (Appendix D of Biological Report) will be implemented.

Mitigation Measure BIO-3a: Pre-construction Surveys. Preconstruction surveys for the San Joaquin kit fox shall be conducted on and within 200 feet of the Project Site, no less than 14 days and no more than 30 days prior to the start of ground disturbance activities on the site. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on and adjacent to the site and evaluate their use by kit foxes.

Mitigation Measure BIO-3b: Avoidance. Should active kit fox dens be detected during preconstruction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

Mitigation Measure BIO-3c: Minimization. Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes in accordance with the USFWS Standardized Recommendations. The applicant shall implement all minimization measures presented in the Construction and On-going Operational Requirements section of the Standardized Recommendations, including, but not limited to: restriction of project related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g. pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper

disposal of food items and trash. See Appendix D of Biological Report (Appendix B) for more details.

Mitigation Measure BIO-3d: Employee Education Program. Prior to the start of construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation. The training will include a handout with all of the training information included in it. The applicant will use this handout to train any construction personnel that were not in attendance at the first meeting, prior to those personnel starting work on the site.

Mitigation Measure BIO-3e: Mortality Reporting. The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures will reduce potential impacts to the San Joaquin kit fox to a less than significant level under CEQA and ensure compliance with state and federal laws protecting this species.

Burrowing Owl

At the time of the field surveys, burrowing owls were observed occupying burrows on the banks of canals immediately adjacent to the proposed pipeline alignment. Although not observed, burrowing owls also have the potential to roost and nest in the site's fallow agricultural field and grassland habitat. If individual owls are occupying burrows on or immediately adjacent to the Project Site at the time of construction, then these owls would be at risk of construction-related injury or mortality. Construction mortality of the burrowing owl would constitute a violation of state laws (see Sections 3.2.5 and 3.2.6) and is a potentially significant impact of the project under CEQA.

Installation of the proposed biogas pipeline will temporarily disturb lands that could be used by burrowing owls for roosting, nesting, and foraging. Following construction, all areas known to be utilized by burrowing owls will return to pre-project conditions and are expected to assume their former level of suitability for this species. Permanent project impacts will be limited to an approximate 1.7-acre area of the onsite fallow agricultural field that has been subjected to considerable disturbance from agricultural activity for decades. This area is of relatively low value for the burrowing owl due to periodic disturbance and the dense growth of weedy vegetation in this area at the time of the July 2019 field survey. Because all project-related impacts to areas known to be utilized by burrowing owls will be temporary, and because areas proposed for permanent impacts are of low habitat value for the burrowing owl, project-related loss of burrowing owl habitat is considered less than significant under CEQA.

Mitigation Measures for Burrowing Owl: To avoid and minimize the potential for project-related injury or mortality of the burrowing owl the project applicant will implement the following measures adapted from the Staff Report on Burrowing Owl Mitigation (CDFG 2012).

Mitigation Measure BIO-4a: Take Avoidance Survey. A take avoidance survey for burrowing owls will be conducted by a qualified biologist between 14 and 30 days prior to the start of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012).

Mitigation Measure BIO-4b: Avoidance of Active Nests and Roosts. If project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer will be established around these burrows. During the non-breeding season (September 1-January 31), resident owls occupying burrows in or near project impact areas will be avoided through the establishment of a 50-meter disturbance-free buffer or passively relocated to alternative habitat as described below. Smaller buffer areas during the non-breeding season may be implemented with the presence of a qualified biological monitor during all activities occurring within 50 meters of occupied burrows. Buffers will remain in place for the duration of project activities occurring within the vicinity of burrowing owl activity.

Mitigation Measure BIO-4c: Passive Relocation of Resident Owls. During the nonbreeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat. This activity would be conducted in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50-foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50-foot buffer and up to 50 meters outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50-foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows and 5) removing the doors and excavating the remaining burrows within the 50-foot buffer.

Implementation of the above measures will reduce potential project impacts to the burrowing owl to a less than significant level under CEQA and ensure compliance with state laws protecting this species.

Nesting Migratory Birds and Raptors

Most of the Project Site consists of habitat that could be used for nesting by one or more avian species protected by state laws. Killdeer may nest on bare ground in ruderal areas. The site's non-native grassland habitat could be used by ground-nesting species such as the western meadowlark and mourning dove. The vegetated banks of Cross Creek and the fallow agricultural field could possibly be used for nesting by the northern harrier. Adjacent trees could be used for nesting by a variety of birds, possibly including the white-tailed kite (*Elanus leucurus*) and loggerhead shrike (*Lanius ludovicianus*). If project construction takes place during the nesting season, birds nesting on or immediately adjacent to the site could be injured or killed by construction activities, or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the Project Site. Construction-related mortality of

nesting birds and disturbance leading to nest abandonment would violate state laws and constitute a significant impact under CEQA.

Although installation of the proposed pipeline will temporarily disturb a small amount of nonnative grassland habitat that could be used for foraging by the northern harrier, white-tailed kite, and loggerhead shrike, such areas will return to pre-project conditions following construction and are expected to assume their former level of suitability for these species. The project will permanently remove an approximate 1.7-acre area of onsite fallow agricultural field that could be used from time to time by the same three special status birds. Similar agricultural lands are abundant in the project vicinity, and the Project Site is adjoined by a large block of grasslands that could represent alternative habitat for any special status birds temporarily unable to nest or forage in the site's grassland habitat during construction. For these reasons, project-related loss of habitat for the white-tailed kite, northern harrier, and loggerhead shrike is considered less than significant under CEQA.

Mitigation Measures for Nesting Migratory Birds and Raptors

Mitigation Measure BIO-5a: Avoidance. In order to avoid impacts to nesting raptors and migratory birds, the project will be constructed, if feasible, from September 16th and January 31st,, which is outside the avian nesting season.

Mitigation Measure BIO-5b: Preconstruction Surveys. If project activities must occur during the nesting season (February 1-September 15), a qualified biologist will conduct preconstruction surveys for active raptor and migratory bird nests within 10 days prior to the start of these activities. The survey will include the proposed work area(s) and surrounding lands within 500 feet, where accessible, for all nesting raptors and migratory birds. If no active nests are found within the survey area, no further mitigation is required.

Mitigation Measure BIO-5c: Establish Buffers. Should any active nests be discovered near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Any tricolored blackbird colonies identified on or adjacent to the site will be protected by a minimum 300-foot construction setback in accordance with Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015 (CDFW 2015). Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will reduce potential project impacts to nesting raptors and migratory birds including the white-tailed kite, tricolored blackbird, northern harrier, and loggerhead shrike to a less than significant level under CEQA, and will ensure compliance with state laws protecting these species.

- b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?**

No Impact: Following the Biological Evaluation, Live Oak Consultants, Inc. determined that no riparian or other sensitive habitats occur on the Project Site. Because these habitats are absent from the Project Site, they will not be impacted by project activities. There is *no impact*.

- c) Would the project have a substantial adverse effect on state or federally protected wet-lands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means?**

Less than Significant Impact: The proposed pipeline alignment intersects Cross Creek, Lakeland Canal, Highline Canal, and several unnamed canals. Because the State Water Resources Control Board and local RWQCBs have jurisdiction over all surface and ground water in California, these features are, at a minimum, waters of the State subject to the regulatory authority of the RWQCB. The USACE has historically asserted jurisdiction over Cross Creek, and it is assumed that CDFW would, as well. The USACE does not generally assert jurisdiction over canals unless the channel receives from and discharges into a water of the U.S. While the Highline Canal appears to receive water from the Kings River and all other on-site canals from Cross Creek, none appear to discharge to a water of the U.S. Therefore, the site's canals are not expected to be subject to the regulatory authority of the USACE. None of the canals are likely to be claimed by CDFW because none appear to replace a natural drainage or support riparian vegetation.

As discussed, the Project Site's canals and creek are waters of the State subject to the regulatory authority of the RWQCB. Cross Creek is also a known water of the U.S. and is additionally likely to be within the jurisdiction of CDFW. The project will utilize horizontal directional drilling to install the pipeline across these features, with no associated impact to jurisdictional areas. The impact is *less than significant*.

- d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Less than Significant Impact: The Project Site contains one feature, Cross Creek, that may function as a movement corridor for locally occurring wildlife, albeit a corridor of modest value due to the lack of riparian cover. Installation of the proposed pipeline may temporarily disrupt wildlife movements along Cross Creek. Work at this location will be short-term and extremely limited in scale. The project will utilize horizontal directional drilling to install the pipeline beneath the creek channel, with no associated impact to surface habitats. Short-term construction disturbance at Cross Creek is not expected to substantially impede the movement of native fish or wildlife species. For these reasons, project impacts to wildlife movements and established movement corridors are considered *less than significant* under CEQA.

- e) **Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

No Impact: The Resource Conservation Element lists policies protecting biological resources (2035 Kings County General Plan, pages RC-47 through RC-50). The project is consistent with all relevant policies, including RC Policy D1.1.1 and RC Policy E1.1.1, which require the preparation of a biological evaluation to ensure the minimization of potential impacts to sensitive plant and animal habitats, wetlands, and riparian habitats; and consultation with state and federal regulatory agencies, where required, to ensure avoidance or minimization of potential impacts to threatened and endangered species.

In accordance with these policies, a biological evaluation was prepared for the Project Site by a qualified biologist. As discussed throughout this section and as summarized in the biological evaluation, the project would not have any potential impacts to wetlands or riparian resources, and would not adversely affect sensitive plant or animal species or habitats. Mitigation Measure BIO-1 requires that a pre-construction survey be completed to identify any nesting migratory birds, and further requires the implementation of buffer zones, where needed, to ensure protection of any nesting birds until the young have fledged. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources. There is *no impact*.

- f) **Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

No Impact: The proposed project appears to be consistent with the goals and policies of the Kings County General Plan. No known Habitat Conservation Plans, Natural Community Conservation Plans or other approved local, regional, or state habitat conservation plan are in effect for the area. Therefore, the project would be carried out in compliance with local policies and ordinances. There is *no impact*.

V. CULTURAL RESOURCES

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|--------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Disturb any human remains, including those interred outside of dedicated cemeteries? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The Hanford Biogas Cluster Project Site is located adjacent to the former shoreline of the Tulare Lake in the San Joaquin Valley, an area occupied by humans for more than 10,000 years. Ethnographically, the Project area was occupied by the Tachi Yokut Tribe for which the Santa Rosa Rancheria was created in 1934.

Numerous cultural resource sites have been identified in Kings County. These sites include the original site of the Town of Lemoore and a Yokut Tribe Cemetery. In addition, four sites within Kings County are listed on the National Register of Historic Places (NRHP), including a Taoist Temple, County Courthouse, Carnegie Library, and the Witt archaeological site. Three additional sites within the County have been designated as California Historical Landmarks, including the Kingston Town Site, the El Adobe de los Robles Rancho, and the Mussel Slough Tragedy site.

Cultural Resources Record Search, Class III Inventory and Phase I Survey:: A records search was conducted on behalf of the Applicant at the Southern San Joaquin Valley Archaeological Information Center (AIC), to determine if historical or archaeological sites had previously been recorded within the study area, if the project area had been systematically surveyed by archaeologists prior to the initial study, and/or whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive.

The AIC results indicated that three previous cultural resource studies have been completed that cross through the project area and no additional surveys were conducted within 0.5 miles of the Project Site. Previous surveys identified three cultural resources within the Project Site, and two cultural resources found within 0.5 miles radius of the Project Site.

A Class III Archaeological Inventory/Phase I survey was conducted for the proposed project by ASM Affiliates in September 2019. The Study found that the Project Site does not contain significant historical resources or historic properties. The full Class III Archaeological Inventory/Phase I Survey report is available in Appendix XXX.

Regulatory Setting

Definitions

Historical Resource: Historical resources are defined by CEQA as resources that are listed in or eligible for the California Register of Historical Resources, resources that are listed in a local historical resource register, or resources that are otherwise determined to be historical under California Public Resources Code Section 21084.1 or California Code of Regulations Section 15064.5. Under these definitions Historical Resources can include archaeological resources, Tribal cultural resources, and Paleontological Resources.

Section 15064.5 of the California Code of Regulations states that the term “historical resources” shall include the following:

- 1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).
- 2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852) including the following:
 - 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 the 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 important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

Archaeological Resources. As stated above, archaeological resources may be considered historical resources. If they do not meet the qualifications under the California Public Resources Code 21084.1 or California Code of Regulations Section 15064.5, they are instead determined to be “unique” as defined by the CEQA Statute Section 21083.2. A unique archaeological resource is an artifact, object, or site that: (1) contains information (for which there is a demonstrable public interest) needed to answer important scientific research questions; (2) has a special and particular quality, such as being the oldest of its type

or the best available example of its type; or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resource (TCR). Tribal Cultural Resources can include site features, places, cultural landscapes, sacred places, or objects, which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register, or determined by the lead agency to be treated as TCR.

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register: The California Historic Register was developed as a program to identify, evaluate, register, and protect Historical Resources in California. California Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, experimental, or other value. In order for a resource to be designated as a historical landmark, it must meet the following criteria:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

Kings County General Plan: The Resource Conservation Element of the 2035 Kings County General Plan includes the following objective pertaining to cultural and historic resources:

- Resource Conservation Objective I1.1 Promote the rehabilitation or adaptation to new uses of historic sites and structures.

Discussion

- a) **Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?**

Less than Significant Impact with Mitigation Incorporation: Based on the results of the Class III Archaeological Inventory and Phase I Survey,, no significant archaeological or historical resources are located within the Project Site. Although no historical resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6, CUL-7 and CUL-8 will ensure that impacts to this checklist item will be *less than significant with mitigation* incorporation.

Mitigation Measures for Impacts to Cultural Resources:

Mitigation Measure CUL-1: A pre-construction site walk will be provided by a member of the Santa Rosa Rancheria Tachi-Yokut Tribe with a member of the lead agency and applicant

representative prior to the start of construction activities to survey the site for signs of surface or subsurface cultural resources.

Mitigation Measure CUL-2: Project construction workers will be required to participate in a Cultural Sensitivity Training program provided by the Santa Rosa Rancheria Tachi-Yokut Tribe's Cultural Department. This program is intended to increase awareness of cultural resources that may be found on the site and inform construction workers of their responsibility to identify and protect cultural resources found within the project area.

Mitigation Measure CUL-3: If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA, additional work such as data recovery excavation and Native American consultation may be warranted to mitigate any adverse effects.

Mitigation Measure CUL-4: The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Mitigation Measure CUL-5: Archaeological Monitoring. Prior to any ground disturbance, a surface inspection of the Project Site shall be conducted by a qualified archeologist. The qualified archeologist shall monitor the site during ground disturbing activities. The archeologist shall provide pre-construction briefings to supervisory personnel, any excavation contractor, and any person who will perform unsupervised, ground disturbing work on the project in connection with construction. These meetings will include information on potential cultural material findings and how to act on the procedures if resources are found.

Mitigation Measure CUL-6: Native American Monitoring. Prior to any ground disturbance, the applicant shall offer interested Tribes the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe.

Mitigation Measure CUL-7: Stop Work in the Event of Unanticipated Discoveries. In the event that cultural resources, paleontological resources or unique geologic features are discovered during construction, operations shall stop within 100 feet of the find, and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall determine the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with §15064.5 of the CEQA Guidelines. Mitigation

measures may include avoidance, preservation in-place, recordation, additional archaeological testing, and data recovery, among other options. Any previously undiscovered resources found during construction within the Project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist. Prior to any ground disturbance, the applicant shall enter into an agreement with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe") regarding cultural resources and burial treatment and protection ("Plan"), which shall be in a form acceptable to the Tribe and the County. Upon discovery of cultural resources, in addition to other procedures described in this mitigation measure, the Kings County Community Development Agency, along with other relevant agency or Tribal officials, shall be contacted to begin coordination on the disposition of the find(s), and treatment of any significant cultural resource shall be undertaken pursuant to the Plan. In the event of any conflict between this mitigation measure and the Plan, the stipulations of the Plan shall control.

Mitigation Measure CUL-8: Upon coordination with the Kings County Community Development Agency, any archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded long-term preservation. Documentation for the work shall be provided in accordance with applicable cultural resource laws and guidelines.

- b) **Would the project cause a substantial adverse change a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

Less than Significant Impact with Mitigation Incorporation: There are no known archaeological resources located within the project area. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6, CUL-7 and CUL-8 will ensure that potential impact will be *less than significant with mitigation* incorporation.

- c) **Would the project disturb any human remains, including those interred outside of dedicated cemeteries?**

Less than Significant Impact with Mitigation Incorporation: There are no known human remains buried in the project vicinity. If human remains are unearthed during development, there is a potential for a significant impact. As such, implementation of Mitigation Measure CUL-4 will ensure that impacts remain *less than significant with mitigation* incorporation.

VI. Energy

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Pacific Gas and Electric (PG&E) provides natural gas and electricity services to the region. PG&E is a subsidiary of the PG&E Corporation and serves approximately 16 million people throughout a 70,000-square-mile service area in northern and central California. PG&E supplies power to its customers from a variety of renewable and nonrenewable sources. The Table 3-5 below shows the proportion of each energy resource sold to California consumers by PG&E in 2017 as compared to the statewide average.

| Fuel Type | | PG&E Power Mix | California Power Mix |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------|----------------------|
| Coal | | 0% | 4% |
| Large Hydroelectric | | 18% | 15% |
| Natural Gas | | 20% | 34% |
| Nuclear | | 27% | 9% |
| Other (Oil/Petroleum Coke/Waste Heat) | | 0% | <1% |
| Unspecified Sources of Power ¹ | | 2% | 9% |
| Eligible Renewables | Biomass | 4% | 2% |
| | Geothermal | 5% | 4% |
| | Small Hydro | 3% | 3% |
| | Solar | 13% | 10% |
| | Wind | 8% | 10% |
| | Total Eligible Renewable | 33% | 29% |
| 1. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources. | | | |

Table 3-5. PG&E and State average power resources; Source: California Energy Commission

Regulatory Setting

Bioenergy Action Plan for California: The Bioenergy Action Plan for California was adopted in 2006. The plan outlines goals, objectives, and actions to achieve the state's bioenergy policy objectives and biomass production and use targets. The policy objectives and biomass production and use targets identified in the Plan are provided below:

State Policy Objectives

1. Maximize the contributions of bioenergy toward achieving the state's petroleum reduction, climate change, renewable energy, and environmental goals.
2. Establish California as a market leader in technology innovation, sustainable biomass development, and market development for bio-based products.
3. Coordinate research, development, demonstration, and commercialization efforts across federal and state agencies.
4. Align existing regulatory requirements to encourage production and use of California's biomass resources.
5. Facilitate market entry for new applications of bioenergy including electricity, biogas, and biofuels.

Biomass Production and Use Targets

In Executive Order S-06-06, Governor Schwarzenegger established the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources:

1. Regarding biofuels, the state shall produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050.
2. Regarding the use of biomass for electricity, the state shall meet a 20 percent target within the established state goals for renewable generation for 2010 and 2020.

Kings County General Plan: The Kings County General Plan Air Quality Element includes goals, objectives, and policies regarding energy efficiency and conservation:

- Initiate and sustain ongoing efforts with local water and energy utilities and developers to establish and implement voluntary incentive-based programs to encourage the use of energy efficient designs and equipment in new and existing development projects within the County.
- Initiate and sustain ongoing efforts with agriculture, the building industry, water and energy utilities and the SJVAPCD to promote enhanced energy conservation and sustainable building standards for new construction.
- Work with local water and energy utilities and the building industry to develop or revise County design standards relating to solar orientation of building occupancies, water use, landscaping, reduction in impervious surfaces, parking lot shading and such other measures oriented towards reducing energy demand.
- Actively promote the more efficient location of industries within the County which are labor intensive, utilize cogeneration or renewable sources of energy, support and enhance agricultural activities, and are consistent with other policies of the General Plan.

- County staff will proactively work with the Cooperative Agricultural Extension office, California Energy Commission, local water and energy utilities, the agricultural industry, and other potential partners to seek funding sources and implement programs which reduce water and energy use, reduce air emissions and reduce the creation of greenhouse gases.

Discussion

- a) **Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

No Impact: During the construction phase of this project there would be a temporary increase in energy consumption due to worker trips and operation of construction equipment. Compliance with local, State, and federal regulations would minimize short-term energy consumption to the greatest extent feasible. This energy use is justified by the purpose of the project, which is to transport raw biogas from surrounding dairy facilities and upgrade it to natural gas standards.

Although By upgrading raw biogas into the readily usable form of energy known as renewable natural gas (RNG), the project prevents the wasteful disposal of an energy resource that would otherwise be released into the environment without benefit.

During project operations, the proposed biogas upgrading facility requires 800 kW of power to operate, and will operate approximately 8.76 hours per day, creating a total energy demand of 2,481,182.4 kWh/year. However, the energy needed to operate the facility is far outweighed by the facility's potential energy output.

The proposed biogas upgrading facility will have the capacity to treat 3,000 square-feet of raw biogas per minute. The total output of RNG from the upgrading facility would be 50-75% of the raw biogas input because methane makes up 50-75% of raw biogas by volume. Therefore, the project has the potential to provide 1,500-2,250 square-feet of RNG each minute.

SoCalGas requires RNG to have a heating value of 990-1150 Btu/square foot to be injected into natural gas pipelines. Based on this heating value range and the proposed operation time, the proposed upgrading facility can provide 2,848,883 - 4,964,923 therms/year at full capacity.

To compare the facility's potential operational energy output to its operational energy demand, it is necessary to convert both to a common unit. While the energy content of RNG is typically expressed in therms, the potential energy output of the biogas upgrading facility was converted to kWh for the purpose of comparison. It was found that the potential energy output of the biogas upgrading facility is 44,529,342 - 77,589,038 83,472,588 - 145,472,795 kWh/year.

Project operation, which involves the transportation and conversion of raw biogas, would also comply with local, State, and federal regulations to avoid inefficient or unnecessary energy usage.

Because the project will generate far more energy than it consumes, the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. There is *no impact*.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

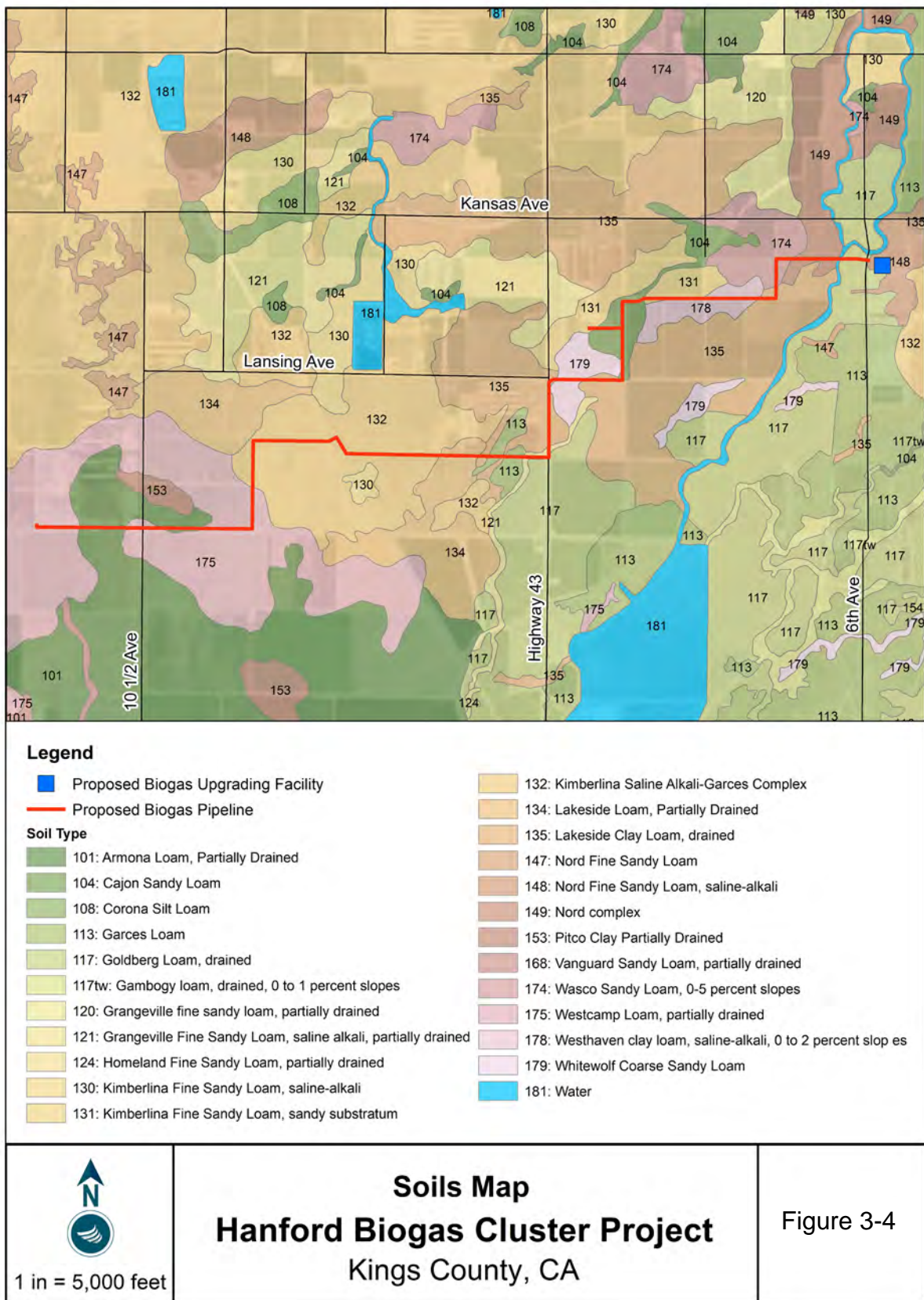
No Impact: The proposed project will not conflict with or obstruct any state or local plans for renewable energy or energy efficiency. The project is consistent with Executive Order S-06-06, which seeks to increase the production and use of bioenergy, and the state policy objectives established by the bioenergy action plan for California. There is *no impact*.

VII. GEOLOGY AND SOILS

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The proposed biogas upgrading facility site is located on soil designated as Lakeside Clay Loam, Drained. The proposed biogas pipeline site stretches 7.3 miles and is in contact with several soil types. The properties of all soil types associated with the project are described briefly below:



Armona Loam, Partially Drained: A small segment of the western portion of the proposed pipeline is located on Armona Loam, partially drained soil. Armona Loam, partially drained soil is a deep, poorly drained saline-alkali soil found in basin rims and flood plains. Permeability for this soil type is moderately slow.

Cajon Sandy Loam: A segment of the pipeline extending toward Hollandia Dairy is located in Cajon Sandy Loam. Cajon Sandy Loam is very deep and excessively drained soil on alluvial fans. This soil type has a slope of 0 to 1 percent and is formed in alluvium derived primarily from igneous and sedimentary rock. Cajon Sandy Loam has very fast permeability, which in turn results in a low to moderate available water capacity. Runoff on this soil is slow, and water erosion is unlikely.

Garces Loam: A small portion of the proposed pipeline is located in Garces Loam. Garces Loam is a deep, well drained saline-alkali soil. Found on alluvial fans, Garces Loam has very slow permeability and runoff, and the hazard of water erosion is slight.

Goldberg Loam, Drained: Two small segments of the pipeline run through Goldberg Loam, Drained soil. Goldberg Loam, Drained soil is a deep, saline-alkali soil found on alluvial plains and flood plains. This soil has a slope of 0 to 2 percent and is formed in alluvium derived primarily from igneous and sedimentary rock. Goldberg Loam, Drained soil has slow permeability. There is a low to high available water capacity due to the salinity of the soil differing depending on location. Runoff is slow, and there is little risk of water erosion.

Grangeville Fine Sandy Loam, Saline Alkali, Partially Drained: One small segment of the proposed pipeline is located on Grangeville Fine Sandy Loam, saline-alkali, partially drained soil. Grangeville Fine Sandy Loam, saline-alkali, partially drained soils are very deep, somewhat poorly drained soils found in alluvial fans and flood plains. Grangeville Fine Sandy Loam, saline-alkali, partially drained soils show moderate permeability. Runoff for this soil type is slow and the hazard of water erosion is slight.

Kimberlina Fine Sandy Loam, Sandy Substratum: A small portion of the proposed pipeline is located on Kimberlina Fine Sandy Loam, Sandy Substrate soils. Kimberlina Fine Sandy Loam, Sandy Substrate soils are very deep and well drained soils located on flood plains and recent alluvial fans. These soils display negligible to medium runoff and moderately rapid to moderate permeability.

Kimberlina Saline Alkali-Garces Complex: As shown in Figure 3-4, a significant portion of the proposed pipeline is located on Kimberlina Saline-Alkali Garces Complex soils. Kimberlina Saline-Alkali Garces Complex soils are very deep and well drained soils found in alluvial fans. The unit is 50% Kimberlina fine sandy loam, saline-alkali, and 50% Garces loam. The components of this unit were not mapped separately. The Kimberlina loam, saline-alkali component shows moderately slow permeability while the Garces Loam component shows very slow permeability. Runoff in this unit is very slow and the possibility of erosion is slight.

Lakeside Clay Loam, Drained: Part of the eastern portion of the proposed pipeline is located on Lakeside Clay Loam, drained soil. Lakeside Clay Loam, drained soils are saline-alkali soils and show moderately slow permeability. Runoff on these soils is very slow and the hazard of water erosion is slight.

Lakeside Loam, Partially Drained: One segment of the proposed pipeline is located on Lakeside Loam, Partially Drained soil. Lakeside Loam, partially drained soils are very deep, saline-alkali soils found in basin

rims and alluvial plains. Lakeside Loam, partially drained soils generally have a fine-loamy texture and are somewhat poorly drained.

Nord Fine Sandy Loam, Saline-Alkali: The biogas upgrading facility and a small portion of the pipeline is located in Nord Fine Sandy Loam, Saline-Alkali soil. Nord Fine Sandy Loam soils are very deep and well drained. This soil type shows moderate permeability but can be relatively slow in saline-sodic phases. Runoff for this soil type is very slow.

Nord Complex: The eastern end of the proposed pipeline is partially located in Nord Complex soils. The Nord series consists of very deep, well drained soils that formed in mixed alluvium dominantly from granitic and sedimentary rocks. These soils typically exhibit negligible to low runoff and moderate permeability. However, permeability may be relatively slow in saline-sodic phases.

Wasco Sandy Loam, 0-5 percent slopes: The Wasco series consists of very deep, well drained soils on recent alluvial fans and flood plains. These soils exhibit negligible or very low runoff and moderately rapid permeability.

Westcamp Loam, Partially Drained: Segments of the western portion of the proposed pipeline is located on Westcamp Loam, partially drained soil Westcamp Loam, partially drained soil is a very deep, saline-alkali soil found in basin rims and flood plains. The soil is somewhat poorly drained with very slow permeability.

Westhaven Clay Loam, Saline-Alkali, 0-2 percent slopes: A segment of the eastern portion of the proposed pipeline is located on Westhaven Clay Loam soils. The Westhaven series consists of very deep, well drained soils that formed in stratified mixed alluvium weathered from sedimentary and/or igneous rocks. These soils exhibit low runoff and moderately slow permeability. They are subject to very rare to occasional flooding in some places.

Whitewolf Coarse Sandy Loam: One segment of the proposed pipeline is located in Whitewolf Coarse Sandy Loam soil. Whitewolf Coarse Sandy Loam soils are deep and can be considered excessively drained. They form in mixed alluvium and have fast permeability. The runoff for the Whitewolf Coarse Sandy Loam soils is slow.

Regulatory Setting

California Building Code: The California Building Code contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures and certain equipment.

Kings County General Plan: The Health and Safety Element of the 2035 Kings County General Plan includes the following objectives pertaining to soils and geology:

- Health and Safety Objective A1.3 Limit growth and development in hazard areas to minimize new areas susceptible to higher risk of natural hazards.

- Health and Safety Objective A1.4 Maintain County building and construction standards and regulations to remain current with State and Federal requirements that serve to protect residents from natural hazards.
- Health and Safety Objective A1.5 Increase communication regarding hazard mitigation among communities in the County, and improve organizational capabilities to address health and safety issues in mitigation and response.
- Health and Safety Objective A2.1 Regulate new construction to achieve acceptable levels of risk posed by geologic hazards.

Definitions

Paleontological Resources. For the purposes of this section, “paleontological resources” refers to the fossilized plant and animal remains of prehistoric species. Paleontological Resources are a limited scientific and educational resource and are valued for the information they yield about the history of the earth and its ecology. Fossilized remains, such as bones, teeth, shells, and leaves, are found in geologic deposits (i.e., rock formations). Paleontological resources generally include the geologic formations and localities in which the fossils are collected.

Discussion

- a) **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

- a-i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

No Impact: According to the 2035 Kings County General Plan, no active faults systems are located within King County. The potential for strong seismic ground shaking on the Project Site is not a significant environmental concern due to the infrequent seismic activity of the area and distance to the faults. The project is not located within the Alquist-Priolo Earthquake Fault Zone and the nearest fault is the Nunez fault, which lies in the Alcalde Hills 7.5-minute quadrangle, located northwest of Coalinga in Fresno County, approximately 46.1 miles west of the Project Site. Furthermore, according to the 2035 Kings County General Plan, there are no known major fault systems within Kings County. The greatest potential for geologic disaster in Kings County is posed by the San Andres Fault, which is located approximately four miles west of the Kings County boundary line with Monterey County. The distance from the nearest active faults precludes the possibility of fault rupture on the Project Site. Therefore, *there would be no impact.*

- a-ii) **Strong seismic ground shaking?**

Less than Significant Impact: The proposed project would not expose people to seismic ground shaking beyond the conditions that currently exist throughout the project area. The Project Site is located within an area designated as Zone V₁ or Valley Zone 1, which is identified as the area of least expected seismic shaking by the Kings County Seismic Zone

Description in the 2035 Kings County General Plan. The Project Site's percent probability of exceeding peak ground acceleration (% g) in the next 50 years is between 20-30%, which is the lowest within the county. Although the project area could potentially experience ground shaking, the magnitude of the hazard would not be severe as indicated by the 2035 Kings County General Plan. These impacts would not be worsened by future expansion of the proposed pipeline network to additional dairy facilities, and the project would be constructed to the standards of the most recent seismic Uniform Building and Safety Code (UBSC). Therefore, *a less than significant impact would occur.*

a-iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact with Mitigation Incorporation: Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. According to the 2035 Kings County General Plan, approximately two miles of the proposed pipeline would be located in an area suitable for liquefaction. However, the General Plan classifies the Project Site as Seismic Zone V1, meaning that the distance to fault systems is sufficiently great that the effect should be minimal. If the pipeline network is expanded in the future to connect additional dairies to the proposed biogas upgrading facility, implementation of Mitigation Measure Geo-1 will prevent impacts related to liquefaction from becoming significant. Therefore, the impact is *less than significant with mitigation incorporation.*

a-iv) Landslides?

No Impact: The Project Site is generally flat. There are no hill slopes in the area and no potential for landslides. No geologic landforms exist on or near the site that would result in a landslide event. If the pipeline network is expanded in the future to connect additional dairies to the proposed biogas upgrading facility, there would be no potential for landslides. There would be *no impact.*

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact: Because the Project Site is generally flat, minimal grading would be required to accommodate the installation of the proposed pipeline, anaerobic digester, and biogas upgrading facility. Although construction activities may result in a loss of topsoil, any soil erosion impacts would be temporary and subject to best management practices required by SWPPP. These best management practices are developed to prevent significant impacts related to erosion from construction. Future projects to expand the proposed pipeline to other dairies will also be required to implement SWPPP best management practices to prevent significant impacts related to erosion. Because impacts related to erosion would be temporary and limited to construction, and required best management practices would prevent significant impacts related to erosion, the impact will remain *less than significant.*

- c) **Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

Less than Significant Impact with Mitigation Incorporation: While a majority of soils associated with the Project Site are considered stable and have a low capacity for landslides, lateral spreading, subsidence, liquefaction or collapse, approximately one mile of the proposed pipeline would be located in an area suitable for liquefaction. However, the General Plan classifies the Project Site as Seismic Zone V1, meaning that the distance to fault systems is sufficiently great that the effect should be minimal. Because the project area is considered to be stable, and this project would not require grading or other activities that would increase the risk of landslides, lateral spreading, subsidence, liquefaction or collapse, and implementation of Mitigation Measure Geo-1 would ensure impacts associated with pipeline expansion would remain less than significant, the impact is considered *less than significant with mitigation incorporation*.

- d) **Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?**

Less than Significant Impact: A very limited portion of the project is considered to be in area of expansive soils as defined by the Kings County General Plan. However, the proposed project would not intensify shrink-swell behavior and the potential for expansive soil conditions would be accounted for in the design and construction practices of the project. Expansive soil conditions would also be accounted for in the design and construction of future pipeline expansion projects. Therefore, the impact is *less than significant*.

- e) **Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

No Impact: Wastewater will not be generated as a result of project implementation and no septic tanks or alternative wastewater disposal systems are proposed. This impact would not be increased by the expansion of the pipeline to connect additional dairies to the proposed biogas upgrading facility. There is *no impact*.

- f) **Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

Less than Significant with Mitigation Incorporation: There are no known paleontological resources located within the project area. However, implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6, CUL-7 and CUL-8 will ensure that any impacts resulting from project implementation remain *less than significant with mitigation incorporation*.

Mitigation Measures for Impacts to Geology and Soils:

Mitigation Measure GEO-1: Prior to final design and issuance of building permits, a geotechnical study shall be prepared for the Project Site and recommendations of the study shall be incorporated into final design of the project. A copy of the report shall be submitted to the Kings

County Community Development Agency for review. If the pipeline is expanded in the future to connect additional dairies to the proposed biogas upgrading facility, a geotechnical study shall be prepared for the proposed expansion site.

VIII. GREENHOUSE GAS EMISSIONS

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Natural processes and human activities emit greenhouse gases. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 34°C cooler. However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The effect of greenhouse gasses on earth's temperature is equivalent to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydro chlorofluorocarbons, and hydro fluorocarbons, per fluorocarbons, sulfur and hexafluoride. Some gases are more effective than others. The Global Warming Potential (GWP) has been calculated for each greenhouse gas to reflect how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to global warming. For example, one pound of methane is equivalent to twenty-one pounds of carbon dioxide.

GHGs as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs as defined by AB 32 are summarized in Table 5. Each gas's effect on climate change depends on three main factors. The first being the quantity of these gases are in the atmosphere, followed by how long they stay in the atmosphere and finally how strongly they impact global temperatures.

| Greenhouse Gas | Description and Physical Properties | Lifetime | GWP | Sources |
|----------------------------|-------------------------------------------------------------|----------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methane (CH ₄) | Is a flammable gas and is the main component of natural gas | 12 years | 21 | Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. |

| Greenhouse Gas | Description and Physical Properties | Lifetime | GWP | Sources |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Carbon dioxide (CO ₂) | An odorless, colorless, natural greenhouse gas. | 30-95 years | 1 | Enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. |
| Chloro-fluorocarbons | Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface). | 55-140 years | 3,800 to 8,100 | Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. |
| Hydro-fluorocarbons | A man-made greenhouse gas. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine and at least one hydrogen atom. | 14 years | 140 to 11,700 | Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases. |
| Nitrous oxide (N ₂ O) | Commonly known as laughing gas, is a chemical compound with the formula N ₂ O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects. | 120 years | 310 | Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. |
| Pre-fluorocarbons | Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface. | 50,000 years | 6,500 to 9,200 | Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing. |
| Sulfur hexafluoride | An inorganic, odorless, colorless, and nontoxic nonflammable gas. | 3,200 years | 23,900 | This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas. |

Table 3-6. Greenhouse Gases; Source: EPA, Intergovernmental Panel on Climate Change

In regards to the quantity of these gases are in the atmosphere, we first must establish the amount of particular gas in the air, known as Concentration, or abundance, which are measured in parts per million, parts per billion and even parts per trillion. To put these measurement in more relatable terms, one part per million is equivalent to one drop of water diluted into about 13 gallons of water, roughly a full tank of gas in a compact car. Therefore, it can be assumed larger emission of greenhouse gases lead to a higher concentration in the atmosphere.

Each of the designated gases described above can reside in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All of these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world regardless of the source of the emission.

Regulatory Setting

AB 32: AB 32 set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

SB 1078, SB 107 and Executive Order S-14-08: SB 1078, SB 107, and Executive Order S-14-08 require California to generate 20% of its electricity from renewable energy by 2017. SB 107 then changes the 2017 deadline to 2010. Executive Order S-14-08 required that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.

Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA and District Policy - Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009): In 2015, the SJVAPCD adopted reference documents for *Guidance for Assessing and Mitigating Air Quality Impacts*, which acknowledges the current absence of numerical thresholds and recommendations for a tiered approach to establish GHG impacts on the surrounding environment:

- I. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
- II. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
- III. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG thresholds may be used to determine impacts. Although the project is not located within the South Coast Air Quality Management District (SCAQMD), SCAQMD currently has a GHG threshold of 10,000 metric tons of CO₂e per year for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Since this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area within California, this threshold is considered

a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Kings County.

Discussion

- a) **Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

No Impact: Greenhouse gas emissions for the construction and operation of the proposed biogas pipeline and upgrading facility were modeled using the California Emissions Estimator Model (CalEEMod). The full CalEEMod report can be found in Appendix A.

Construction: Greenhouse gas emissions, generated during construction, would include activities such as site preparation, trenching for pipeline installation, and construction of the biogas upgrading facility. The CalEEMod Emissions report predicts that this project will create a maximum of 200.36 MT of CO₂e emissions per year. Because the SJVAPCD does not have numeric thresholds for assessing the significance of construction-related GHG emissions, predicted emissions from project construction were compared to SCAQMD thresholds for construction related GHG emissions. The SCAQMD currently has a threshold of 10,000 metric tons of CO₂e per year for construction emissions amortized over a 30-year project lifetime plus annual operation emissions. Because this threshold was established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area within California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Kings County. Amortized for a typical 30-year lifetime, construction related GHG emissions are estimated at approximately 9.4 MT CO₂e per year.

Operation: The proposed biogas upgrading facility requires 800 kW of power to operate, and will operate approximately 8.76 hours per day, creating a total energy demand of 2481182.4 kWh/year. Electricity will be provided to the site by PG&E, which has an emissions rate of 0.524 lbs CO₂ per kWh. Therefore, operation of the proposed project will generate approximately 589.7 MT CO₂/year. This number will likely decrease over time to reflect increasing emissions standards for utility companies.

Amortized over a 30-year period, the total annualized GHG emissions from the construction and operation of the proposed project is estimated to be 599.1 MT CO₂e, which is well below the threshold established by the SCAQMD. According to SJVAPCD, projects that comply with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which a project is located would be determined to have a less than significant individual and cumulative impact on GHG emissions. The GHG emissions associated with the proposed project would not exceed the quantitative thresholds developed by the neighboring Air Quality Management District. Therefore, GHG emissions from the project would not have a significant impact on the environment and the impact is considered to be *less than significant*.

- b) **Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

No Impact: The SJVAPCD is responsible for regulating GHG emissions within the project area to meet statewide GHG emission reduction objectives. The regulations and standards enforced by the SJVAPCD are designed to ensure that the region meets the goals of AB 32, SB 1078, SB 107, and Executive Order S-14-08. The project is not in conflict with any local or statewide plans, policies or regulations adopted to reduce GHG emissions. There is *no impact*.

IX. HAZARDS AND HAZARDOUS MATERIALS

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The proposed Project Site is located approximately 7.5 miles from the nearest airport (Hanford Municipal Airport) and 3 mile from the nearest school (Lakeside Union Elementary School). The Department of Toxic Substances Control's (DTSC's) Envirostor was used to identify any sites known to be associated with releases of hazardous materials or wastes within the project area. This research confirmed that the project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Regulatory Setting

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA,

or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration. The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to assure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction, operation, and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.). The Toxic Substance Control Act was enacted by Congress in 1976 and authorizes the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

Hazardous Waste Control Law, Title 26. The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11. Title 22 of the California Code of Regulations contains regulations for the identification and classification of hazardous wastes. The CCR defines a waste as hazardous if it has any of the following characteristics: ignitability, corrosively, reactivity, and/or toxicity.

California Emergency Services Act. The California Emergency Services Act created a multi-agency emergency response plan for the state of California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Hazardous Materials Release Response Plans and Inventory Law of 1985. Pursuant to the Hazardous Materials Release Response Plans and Inventory Law of 1985, local agencies are required to develop “area plans” for response to releases of hazardous materials and wastes. Kings County maintains a Hazardous Material Incident Response Plan to coordinate emergency response agencies for incidents and requires the submittal of business plans by persons who handle hazardous materials.

Discussion

- a) **Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Less than Significant Impact with Mitigation Incorporation: Project construction activities may involve the use and transport of hazardous materials. During construction, the contractor will use

fuel trucks to refuel onsite equipment and may use paints and solvents to a limited degree. Construction and operations related activities will comply with the California fire code, local building codes, and gas pipeline regulations.

The plant will be designed to comply with all relevant codes, most importantly, those of the National Fire Protection Association (NFPA), the National Electrical Code (NEC), and of the American Society of Mechanical Engineers (ASME). Hazard areas will be classified within the plant, and Instrumentation and equipment will be selected which is suitable for the hazard areas in which they reside. The pressure vessels will be equipped with pressure safety valves (PSVs) and operation of the plant will be under the continuous control of a supervisory control and data acquisition (SCADA) system. The SCADA system will monitor operating pressures, temperatures and flow rates, and in the event of off-specification conditions, the SCADA system will automatically initiate a controlled plant shutdown. The plant will also be equipped with emergency stop (E-stop) buttons at key locations, which will allow the operator to directly initiate a plant shutdown. The Kings County Fire Department will be responsible for enforcing provisions of the fire code and the California Public Utilities Code regulates the safety of gas transmission pipelines. Standard safety measures for biogas treatment facilities include safety flares to reduce excess gas storage.

During project operations, raw biogas will be transported through a pipeline to a biogas upgrading facility. Raw biogas is composed primarily of Methane and Carbon dioxide (see Table 3-7).

| Compound | Formula | % |
|------------------|------------------|---------|
| Methane | CH ₄ | 50-75 |
| Carbon dioxide | CO ₂ | 25-50 |
| Nitrogen | N ₂ | 0-10 |
| Hydrogen | H ₂ | 0-1 |
| Hydrogen sulfide | H ₂ S | 0.1-0.5 |
| Oxygen | O ₂ | 0-0.5 |

Table 3-7 Typical Composition of Biogas; Source: Archived 6 January 2010 at the Wayback Machine., www.kolumbus.fi.

Methane: Although methane is not toxic, handling methane can be hazardous. Methane has an ignition temperature of 1,000 degrees Fahrenheit and is flammable at concentrations between 5 and 15 percent in air. There are no spark sources within the pipe so no combustion could occur within the pipeline. If a gathering line is breached, flammable methane will leak. However, because raw biogas only contains 60-75% methane, and the operating pressure of the pipeline is only 50 psig, the risks associated with the pipeline are less than that of a typical natural gas transmission line. By comparison, natural gas contains 87-97% methane and natural gas transmission lines generally operate at pressures above 200 psi. Additionally, the presence of carbon dioxide in the raw biogas would make the methane difficult to light and maintain combustion. The pipeline will be built and monitored to the US Department of Transportation Pipeline Safety and Hazardous Materials Administration (PSHMA) standards. Consistency with these standards ensures that any risks associated with the transport of Methane are reduced to less than significant levels.

Carbon dioxide: Because Carbon dioxide is heavier than air; the presence of carbon dioxide can pose risks to human health in the event of a gathering line breach. While leaked carbon dioxide would normally dissipate by diffusion, there is risk of suffocation if carbon dioxide leaks into a hole or trench. The SCADA system will continuously monitor flow and pressure at the inlet and outlet of the pipeline and is designed to initiate an automatic shutdown in the event of off-specification conditions. If a gathering line breach does occur, the SCADA system would recognize a change in pressure and initiate immediate shutdown. This would suspend delivery and prevent excess accumulation of carbon dioxide.

Hydrogen sulfide: Hydrogen sulfide is the only compound found in biogas that is specifically listed as a hazardous material. Hydrogen sulfide can be immediately dangerous to life and health at concentrations over 100 ppm. Biogas contains about 5,000 ppm Hydrogen Sulfide, which can be extremely lethal. Concentrations of Hydrogen sulfide will be reduced to less than 100 ppm at each dairy before entering the gathering lines. Therefore, the gas in the gathering lines will contain less than 100 ppm Hydrogen Sulfide. If there is a gathering line breach, the escaping low concentration Hydrogen sulfide will quickly dissipate.

Because the biogas in the pipeline will not contain dangerous levels of Hydrogen sulfide, the pressures within the pipeline are not high enough to be of risk, and the SCADA system will prevent the release of excess gasses in the event of a breach, implementation of Mitigation Measure HAZ-1 will further prevent impacts related to hazardous materials, the impact is reduced to *less than significant with mitigation*.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact with Mitigation Incorporation: Although the project does have the potential to release biogas into the air in the event of equipment failure, it would not create a significant hazard to the public or environment. The operation of the plant will be under the continuous control of a supervisory control and data acquisition (SCADA) system. The SCADA system will monitor operating pressures, temperatures and flow rates. In the event of off-specification conditions, the SCADA system will automatically initiate a controlled plant shutdown. The plant will also be equipped with emergency stop (E-stop) buttons at key locations, which will allow the operator to directly initiate a plant shutdown.

Although small amounts of methane, carbon dioxide, and hydrogen sulfide could be released prior to plant shutdown, this will not create a substantial public hazard. Methane, while flammable at concentrations found in biogas, is lighter than air and would dissipate very quickly once system shutdown occurs. Because carbon dioxide is heavier than air, there is a risk of suffocation if carbon dioxide accumulates into a hole or trench. The SCADA system would prevent excess carbon dioxide accumulation by initiating immediate shutdown once a breach is sensed. The release of hydrogen sulfide could result in impacts to human health if toxic gasses are inhaled, however because the gas in the gathering lines will contain less than 100 ppm Hydrogen sulfide, and the concentrations of Hydrogen sulfide would quickly dissipate after system shutdown is initiated by the SCADA system, significant impacts to human health would not occur.

Implementation of Mitigation Measure Haz 1 will ensure that, in the event of a leak or rupture, the facility is shut down as soon as possible to minimize the release of biogas into the atmosphere. The inclusion of manual E-stop buttons will provide an additional fail-safe in the event of equipment failure. The impact is reduced to *less than significant with mitigation*.

The compounds found in biogas are mostly not considered to be hazardous. Biogas does contain a small amount Hydrogen sulfide, which is considered to be hazardous, however the compound is found in only limited amounts in biogas. In the unlikely event that biogas is accidentally released into the atmosphere by a leak or rupture of the pipe segments, any Hydrogen sulfide released into the atmosphere would be at concentrations far below the State Standard. Expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility would not increase the severity of this impact. Implementation of Mitigation Measure Haz-1 will further reduce this impact by limiting additional release of Hydrogen sulfide if equipment failure does occur. The impact is reduced to *less than significant with mitigation incorporation*.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact: The project is not located within ¼ mile of an existing or proposed school, and there is no reasonably foreseeable condition or incident involving the emission, handling, or disposal of hazardous materials, substances, or waste that would affect areas within ¼ miles of existing or proposed school sites. Additionally, any expansion of the proposed pipeline network will not occur within ¼ mile of an existing or proposed school. There is *no impact*.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact: The Project Site is not listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. Additionally, any expansion of the proposed pipeline network will not occur in any areas listed as a hazardous materials site. There would be *no impact*.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact: The proposed project is located approximately 7.5 miles away from the nearest airport (Hanford Municipal Airport) and is not located in an airport land use plan. Additionally, the proposed pipeline network would not be expanded to include areas within an airport land use plan or within 2 miles of a public airport. There is *no impact*.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact: The proposed project's access routes would meet all emergency access requirements of Kings County. Construction of the proposed project would not create an obstruction to surrounding roadways or other access routes used by emergency response units. The proposed

project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

In times of emergency or disaster response, the State highways would serve as primary routes and designated County arterial roadways in the area would serve as secondary routes. According to Figure HS-20 of the Health and Safety Element of the 2035 Kings County General Plan, in the Project vicinity the primary routes would include SR-43 and SR-198 and the secondary routes would consist of Kansas, Houston, 10th, and 10 1/2 Avenues. These nearby highways and County roads provide several alternative escape routes with relatively low ambient traffic volumes. The Project would not result in changes to the adjacent roadway network, and the operational workforce would not create or increase traffic congestion during times of emergency or disaster. Therefore, *no impact would occur*.

g) Would the project expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?

No Impact: The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for identifying the governmental agencies responsible for preventing and suppressing fires in all areas of the State. Within the County, this responsibility is shared between the cities, County, State, and Naval Air Base. Generally, fire season in Kings County extends from early spring to late fall. Determination of wildland fire hazards is based on three major factors: fuel loading, weather conditions, and topography.

In most of Kings County, CAL FIRE ranks fuel loading as low fuel hazards, where fuels are mainly crops and grasses. Vacant parcels where dry weeds are permitted to accumulate are a fire hazard, but grain crops, such as oats and barley, are also at risk because they are harvested in a dry state during the peak fire season. According to Figure HS-9 of the 2035 Kings County General Plan Health and Safety Element, the Project Site is within 2,400 meters of a moderate threat from wildfires. This designation applies to a large majority of Kings County. The land surrounding the Project Site is designated for agricultural land use. Project construction would not require blasting or any other technique that would increase wild land fires. Installation and maintenance of the project would result in a reduction of brush at the Project Site and would therefore reduce the threat of wildfire in the area. For these reasons, the proposed project would have *no impact* to wildland fires.

Mitigation Measures for Impacts to Hazards and Hazardous Materials:

Mitigation Measure HAZ-1: Installation of a supervisory control and data acquisition (SCADA) system shall be established and maintained for the operational life of the project. The SCADA system will monitor operating pressures, temperatures and flow rates, and in the event of off-specification conditions, the SCADA system will automatically initiate a controlled plant shutdown. The plant shall also be equipped with emergency stop (E-stop) buttons at key locations, which will allow the operator to directly initiate a plant shutdown.

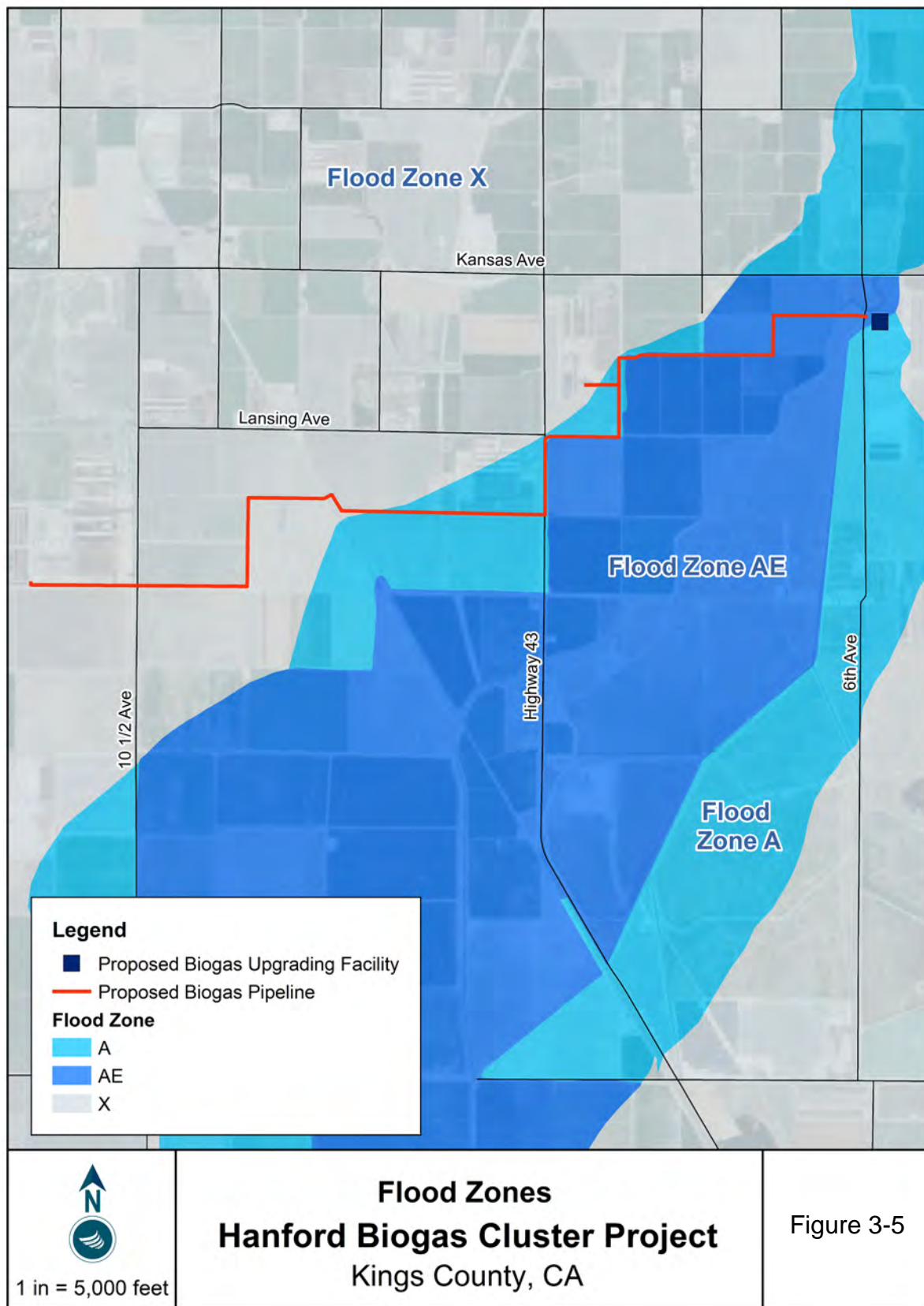
X. HYDROLOGY AND WATER QUALITY

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? | | | | |
| i) result in substantial erosion or siltation on- or off-site; | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv) impede or redirect flood flows? | | | | <input checked="" type="checkbox"/> |
| d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Groundwater: The proposed Project Site is located in the Tulare Lake Hydrologic Region, which covers 10.9 million acres south of the San Joaquin River. The Tulare Lake Hydrologic Region is composed of 12 groundwater basins. The proposed Project Site lies within the San Joaquin Valley Groundwater Basin. The San Joaquin Valley Groundwater Basin is divided into seven sub-basins. The proposed biogas upgrading facility would be located within the Kaweah Sub-basin. A portion of the proposed pipeline would also be located within the Kaweah Sub-basin, while a portion would cross into the Tulare Lake Sub-basin.

Surface Waters: The proposed Project Site is within the Tulare-Buena Vista Lakes Watershed which covers portions of Kern and Kings County. The most prominent rivers and streams within the Watershed are the Kings River and the Kaweah River. The alluvial fans of the Kings River and Kaweah River dominate the landscape within the Kings County Water District. Other surface waters include the Saint Johns River and Cross Creek.



Regulatory Setting

Clean Water Act: The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

Central Valley RWQCB: The proposed Project Site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB requires a National Pollution Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a NPDES Permit and SWPPP will be required.

Discussion

- a) **Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?**

Less than Significant Impact with Mitigation Incorporation: Because implementation of the proposed project will involve ground disturbance of more than one-acre, significant impacts related to water quality standards or waste discharge requirements may occur. However, a SWPPP will be required for the project and will include erosion and sediment control measures to reduce runoff during construction. Implementation of BMPs through stormwater quality protection measures would ensure there is no violation of water quality standards or waste discharge requirement during construction. Impacts to water quality or waste discharge are not anticipated for post-construction operation or maintenance on the biogas project.

Implementation of Mitigation Measure HYD-1 will ensure that this project will not violate any water quality standards or wastewater discharge requirements. Therefore, the impact is *less than significant with mitigation incorporation*.

Mitigation Measure HYD-1: Stormwater Quality Protection: Prior to project construction, the applicant shall be required to file a “Notice of Intent” (NOI) with the SWRCB to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be prepared by a licensed engineer and shall detail the treatment measures and best management practices (BMPs) to control pollutants that shall be implemented and complied with during project construction. Example SWPPP measures may include the following:

- Preserve existing vegetation where required and when feasible
- Reseeding vegetation, where appropriate
- Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding, or alternative methods
- Maintain sufficient quantities of temporary sediment control materials on-site throughout the duration of the project

- b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

Less than Significant Impact: The proposed project would not have a significant impact on groundwater resources. During project construction, water use is estimated to be approximately 0.12 acre-feet/acre/month. This water will be used primarily for dust control. During operations, the proposed project will not use any water for the biogas upgrading process, however approximately 10 gallons per day would be used for periodic equipment cleaning and other miscellaneous maintenance tasks. For the 9-acre project, this would equate to approximately 0.000102 acre-feet/acre/month.

The Project Site is located in an area of significant agricultural activity. Therefore, it is relevant to compare project-related water use to typical agricultural water use. Because the Kings County General Plan identifies wheat (grain) as having the largest number of harvested acres within the County, the amount of water used for wheat production was used to evaluate the significance of the project's water use.

The 2015 California Agricultural Production and Irrigated Water Use Report states that wheat production requires an average of 2.1 acre-feet of applied water/acre/year, or 0.18 acre-feet/acre/month. Because construction-related water use is anticipated to be approximately 0.12 acre-feet/acre/month, and operational water use is anticipated to be approximately 0.000102 acre-feet/acre/month, both construction and operation of the proposed project would require less water than would be required by typical crop cultivation.

Future expansion of the proposed pipeline network would result in additional construction-related water use; however, it would not result in increased operational water use. Construction-related water use for pipeline expansion is estimated to be approximately 0.12 acre-feet/acre/month.

Because the project would use a relatively small amount of water in comparison to adjacent agricultural uses, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. The proposed project does not meet the definition of a "project" as defined by Water Code Water Code § 10912 and would not be subject to a Water Supply Assessment pursuant to SB 610 or SB 221. The impact is *less than significant*.

- c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:**

- i. result in substantial erosion or siltation on- or off-site?**

Less than Significant Impact: The proposed project will not impact existing drainage patterns or alter the course of a stream or river. The project area is generally flat and no significant grading or leveling will be required. Added impervious surfaces will be limited to the footprint of the biogas upgrading facility and all stormwater will be contained on-site. This impact would not be increased if the proposed pipeline network were expanded

to connect additional dairies to the proposed biogas upgrading facility. Therefore, the project will have a *less than significant impact* on erosion or siltation on or off site.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less than Significant Impact: The proposed project will not alter existing drainage patterns or increase surface runoff in a manner that could result in flooding on or off site. The project area is generally flat and no significant grading or leveling will be required. Added impervious surfaces will be limited to the footprint of the proposed biogas upgrading facility and all stormwater will be contained on-site. This impact would not be increased if the proposed pipeline network were expanded to connect additional dairies to the proposed biogas upgrading facility. Therefore, the project will have a *less than significant impact* on flooding on or off site.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact with Mitigation Incorporation: The proposed project will not alter existing drainage patterns or impact existing stormwater drainage systems during project operations. However, pipe installation and other construction activities could create a potential for surface water to carry sediment into the storm water system and downstream waterways. Implementation of Mitigation Measure HYD-1 will reduce impacts related to stormwater and polluted runoff to less than significant levels. Therefore, the impact is *less than significant with mitigation incorporation*.

iv. impede or redirect flood flows?

Less than Significant Impact: The project will not substantially alter the existing drainage pattern of the site, nor alter the course of a stream or river. The project site contains a relatively small area of impervious concrete to be installed above the adopted FEMA Base Flood Elevation to prevent flooding of permanent site fixtures. The remaining area of the small site shall be below the Base Flood Elevation, sloped and graded to minimize any potential flood impacts. Storm water accumulated on the proposed site shall be retained on the parcel, as occurs currently. Therefore, the project will have a *less than significant impact* on flood flows.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

No Impact: The proposed project is located inland and not near an ocean or large body of water, therefore, would not be affected by a tsunami. The proposed project is located in a relatively flat area and would not be impacted by inundation related to mudflow. This impact would not be increased if the proposed pipeline network were expanded to connect additional dairies to the proposed biogas upgrading facility. Therefore, the proposed project would have *no impacts* related to seiche, tsunami, or mudflow.

- e) **Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

No Impact: The proposed project would comply with local, State, and federal regulations regarding water quality and groundwater management. It would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. There is *no impact*.

XI. LAND USE AND PLANNING

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

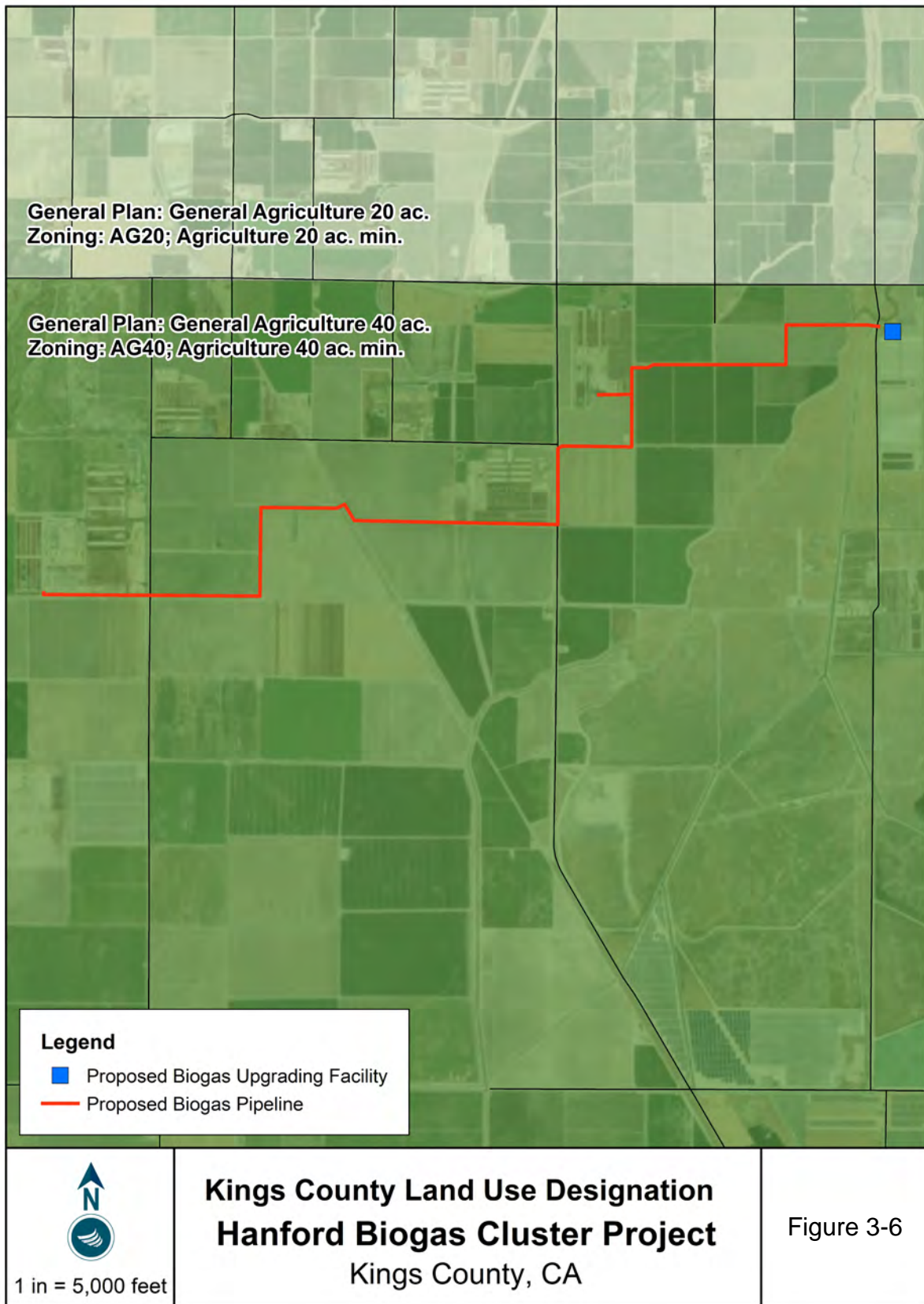
Environmental Setting

The proposed project is located in an unincorporated area of Kings County, approximately 6 miles north of Corcoran and 5 miles south of Hanford. The proposed Project Site and surrounding properties are under agricultural land uses. There are seven agricultural residences within a half mile of the proposed Project Site, however all land within this radius is zoned and designated under the general plan for agricultural land use (Figure 3-6).

Regulatory Setting

Kings County General Plan: As shown in Figure LU-11, the Kings County Land Use Map shows that the proposed Project Site and surrounding properties are designated under the 2035 Kings County General Plan for General Agriculture 40 ac. Page LU-13, Section III.A.1. of the “Land Use Element” of the *2035 Kings County General Plan* states that agricultural land use designations account for a vast majority of the County’s land use. Included within this land use type are four agricultural type land use designations, Limited Agriculture, General Agriculture 20 Acre Minimum, General Agriculture 40 Acre Minimum, and Exclusive Agriculture. The major differences between the four Agriculture designations relate to minimum parcel size, animal keeping, and agricultural service businesses. These designations preserve land best suited for agriculture, protect land from premature conversion, prevents encroachment of incompatible uses, and establish intensity of agricultural uses in a manner that remains compatible with other uses within the County. The development of agricultural service and produce processing facilities within the Agricultural areas of the County shall develop to County standards.

Page LU-13, Section III.A.1. of the “Land Use Element” of the *2035 Kings County General Plan* states that the AG-40 designation is applied to rural areas of the county south of Kansas Avenue, excluding the Urban Fringe areas of Corcoran, the Communities of Kettleman City and Stratford, and high slope areas of the Coast Ranges. Included within this designation are large corporate farming areas of the Tulare Lake Basin and areas of the valley floor generally characterized by extensive and intensive agricultural uses. Extensive irrigation channels and levees divert surface water to support field crops along the valley floor and orchards along the Kettleman Hills. This designation allows intensive agricultural uses that by their nature may be incompatible with urban uses. Much of the land within this designation is also subject to flood hazard risk and should remain devoted to agriculture use to reduce the potential for future conflicts.



Page LU-27, Section IV.B of the “Land Use Element” of the 2035 *Kings County General Plan* states that Agriculture Open Space is the most extensive environment category that displays the rural agricultural nature of the County. This environment category covers the vast agricultural resources of the County that accounted for \$1.76 billion in 2008 gross agricultural production. The Agricultural land use designations (Limited Agriculture, General Agriculture 20 Acre, General Agriculture 40 Acre, and Exclusive Agriculture) are used to define distinct areas of agricultural intensity, and protect agricultural land from the encroachment of incompatible uses. Limited and General Agriculture designated areas provide appropriate locations for agricultural support businesses, while Exclusive Agriculture provides a safety and noise buffer around the Naval Air Station Lemoore. Other small areas designated Open Space and Public are also intermixed throughout the vast agricultural landscape. These include open space buffers near community districts, and public facilities such as school sites, utility provider sites, wastewater facilities, and County parks. The following objectives in the Land Use Element of the 2035 *Kings County General Plan* are applicable to the Project Site’s agricultural land use designation:

- Land Use Objective B1.1 Preserve the integrity of the County’s agricultural land resources through agricultural land use designations and other long term preservation policies.
- Land Use Objective B1.2 Maintain large parcel sizes of agricultural designated land within Urban Fringe areas and around Community Districts to retain viable agricultural production until such time as land is planned and ready for conversion to other uses.
- Land Use Objective B2.1 Recognize agriculture as the highest and best use of agricultural designated land, and preserve the right of farmers and agricultural operations to continue customary and usual agricultural practices, and operate in the most efficient manner possible.
- Land Use Objective B2.2 Minimize and reduce the potential for conflicts between agriculture and non-agricultural urban uses.
- Land Use Objective B2.3 Increase diversified business opportunities within agricultural areas when they are compatible with agricultural operations.
- Land Use Objective B3.1 Direct agricultural support services to General Agriculture land use designated areas, while ensuring that services are not harmful to the long term agricultural use of the land or potential future urban growth if within the Blueprint Urban Growth Boundary.

Page RC-42 of the “Resource Conservation Element” of the 2035 *Kings County General Plan* identifies the following objectives and policies related to resource conservation planning areas:

- RC OBJECTIVE A2.1: Maintain the existing Kings River water conveyance system as a designated floodway, and encourage the preservation of riparian habitat along the Kings River consistent with state and federally mandated flood control purposes.
 - RC Policy A2.1.1: Recognize the Kings River Conservation District's responsibility to maintain the Kings River channels and levees for flood control purposes. On land within the floodway, allow farming and other uses that are consistent with the designated floodway regulations and any requirements of the Central Valley Flood Protection Board.
 - RC Policy A2.1.2: Apply the "Natural Resource Conservation" land use designation along the Kings River, Cross Creek, and in environmentally sensitive areas having existing natural watercourses, drainage basins, sloughs, or other natural water features. Permitted uses within designated floodway channels shall be limited to uses such as flood control channels, water pumping stations and reservoirs, irrigation ditches, water recharge basins, limited open public recreational uses such as passive riverside parks,

related incidental structures, and agricultural crop production that does not include permanent structures. Any construction or development in this designation along the Kings River designated floodway channel shall be subject to the encroachment permit process required by the Central Valley Flood Protection Board.

- RC Policy A2.1.3: Apply the "Natural Resource Conservation" land use designation to all areas of the County west of State Route 33 where topography consists of 15% or greater slopes. Permitted uses on steep sloped Natural Resource Conservation land include livestock grazing, livestock and timber, vines, and horticultural specialties.
- RC Policy A2.1.4: Coordinate the review of all development proposals within or adjacent to designated floodways with relevant resource conservation district entities to ensure compliance with Central Valley Flood Protection Board requirements, and local Floodplain Administration requirements.

Kings County Development Code: The proposed Project Site and surrounding properties are zoned as AG-40, General Agricultural-40. This district is intended for intensive agricultural uses of land. This area should be reserved for commercial agricultural uses due to its high soil quality. The minimum parcel size in the AG-40 zoning district is 40 acres. Biomass energy facilities, such as the proposed project are allowed in this zoning district with a Conditional Use Permit. The following is from the Kings County Development Code related to this project:

Article 4, Section 407: Table 4-1 prescribes the land use regulations for "Agricultural" districts. The regulations for each district are established by letter designation shown in the key, which lists Biomass energy facilities as a conditional use subject to Kings County Planning Commission approval of a Conditional Use Permit in the General Agricultural (AG-40) and (AG-20) Zone District.

Article 10, Sec. 1007: Article 10, Sec. 1007 of the Kings County Development Code requires that all structures proposed within Natural Resource Conservation Overlay Zones require approval of a Conditional Use Permit and states that any construction, development and land clearing in this overlay zone may be subject to additional requirements due to potential environmental impacts and the need to protect riparian vegetation and wetlands along the banks. The following development standards are also identified in this section:

- Prior to the issuance of any permit for construction or development in the NRCOZ along the Kings River designated floodway channel the applicant is required to comply with the encroachment permit process required by the Central Valley Flood Protection Board.
- Property owners who intend to build on property along the Kings River or its levees shall provide written documentation from the California Department of Fish and Wildlife and the Kings River Conservation District showing that the property owner is aware of the possible environmental impacts and has met any permit requirements.

All discretionary permit applications for projects along the Kings River and Cross Creek shall be submitted to the appropriate local, state, and federal agencies for review and approval.

Discussion

a) Would the project physically divide an established community?

No Impact: The Project Site and pipeline route are not located within or near an established community. Therefore, the proposed project will not physically divide an established community. Future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility would not result in the physical division of an established community. There will be *no impacts*.

b) Would the project Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact: The proposed project is a permitted use under the current zoning and general plan land use designation, as noted in this document's Regulatory Setting section for Land Use and Planning. Future expansion of the proposed pipeline network will only occur in areas that are also designated for agricultural use. The project does not conflict with any land use plans for the area, and there is *no impact*.

XII. MINERAL RESOURCES

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally - important mineral resource recovery site delineated on a local general plan, specific plan or other lands use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

There are no mineral resource zones in Kings County, and there is no mineral extraction occurring on or adjacent to the proposed Project Site. Historical mines within the County include an open pit gypsum mine and a mercury mine; however these mines are now closed.

Regulatory Setting

California State Surface Mining and Reclamation Act: The California State Surface Mining and Reclamation Act was adopted in 1975 to regulate surface mining to prevent adverse environmental impacts and to preserve the state's mineral resources. The Act is enforced by the California Department of Conservation's Division of Mine Reclamation. Under the California State Surface Mining and Reclamation Act of 1975, Mineral Resource Zones (MRZs) are used by the State Geologist to classify land according to its level of significance as a mineral resource. MRZs are used to help identify and protect state mineral resources from urban expansion or other irreversible land uses that might preclude mineral extraction.

The State Geologist has not yet mapped and classified mineral resources in Kings County (CDC 2013). No Mineral Resource Zone (MRZ) designations have been identified within the county. Only limited commercial mining and mineral extraction takes place in Kings County and such activities are currently limited to excavation of sand, gravel, and some hydrocarbon drilling. Historical mining of gypsum, mercury, and hydrocarbons indicated that there may be deposits of these minerals within Kings County (Kings County CDA 2010).

Discussion

- a) **Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

No Impact: There are no known mineral resources of importance to the region on the Project Site and the Project Site is not designated under the County's General Plan as an important mineral resource recovery site (Kings County General Plan 2035). Thus, there is *no impact*.

- b) **Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

No Impact: Future pipeline expansion will not be permitted in areas considered to be an important mineral resource recovery site. Therefore, the proposed project would not result in the loss or impede the mining of regionally or locally important mineral resources. There is *no impact*.

XIII. NOISE

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity or the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Generation of excessive ground-borne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) For a project located within the vicinity of a private airstrip or airport land use plan or, where such a plan has not been adopted, within two miles of public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Noise is often described as unwanted sound. Sound is the variation in air pressure that the human ear can detect. If the pressure variations occur at least 20 times per second, they can be detected by the human ear. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Ambient noise is the “background” noise of an environment. Ambient noise levels on the proposed Project Site are primarily due to agricultural activities and traffic. Construction activities usually result in an increase in sound above ambient noise levels.

There are seven agricultural residences within a half mile of the proposed project. All lands within a half mile of the Project Site are designated for agricultural land uses. Agricultural activities on agricultural lands are protected under Kings County Right-to-Farm Ordinance.

Regulatory Setting

Kings County General Plan: The Noise Element of the 2035 Kings County General Plan contains the following non-transportation noise standards for the unincorporated area of the county:

| Table N-8 Non-Transportation Noise Standards Average (Leq) / Maximum (Lmax)¹ | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------|-----------------------|-------|
| Receiving Land Use | Outdoor Area ² | | Interior ³ | Notes |
| | Daytime | Nighttime | Day & Night | |
| All Residential | 55 / 75 | 50 / 70 | 35 / 55 | |
| Transient Lodging | 55 / 75 | --- | 35 / 55 | 4 |
| Hospitals & Nursing Homes | 55 / 75 | --- | 35 / 55 | 5, 6 |
| Theaters & Auditoriums | --- | --- | 30 / 50 | 6 |
| Churches, Meeting Halls, Schools, Libraries, etc. | 55 / 75 | --- | 35 / 60 | 6 |
| Office Buildings | 60 / 75 | --- | 45 / 65 | 6 |
| Commercial Buildings | 55 / 75 | --- | 45 / 65 | 6 |
| Playgrounds, Parks, etc. | 65 / 75 | --- | --- | 6 |
| Industry | 60 / 80 | --- | 50 / 70 | 6 |
| Notes: 1. The Table N-8 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table N-8, then the noise level standards shall be increased at 5 dB increments to encompass the ambient. 2. Sensitive areas are defined acoustic terminology section. 3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions. 4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours. 5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients. 6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours. | | | | |

Discussion

- a) **Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Less than Significant Impact: Project construction is anticipated to last approximately 6 months and will involve temporary noise sources in the vicinity of the project. The average noise levels generated by construction equipment that will likely be used in the proposed project are provided in Table 3-8.

Agricultural residences are the nearest sensitive receptors to the Project Site. The nearest agricultural residence is approximately 1,500 feet from the Project Site and there are six other agricultural residences located within a half mile of the proposed project. The County requires that mitigation measures be implemented if noise levels exceed 75 dB in sensitive outdoor areas or if interior noise levels exceed 55 dB (Lmax). As shown in Figure 3-8, it was found that a residence must be at least 160 feet from construction to avoid noise levels exceeding these thresholds.

There are no residences or other sensitive receptors within 160 feet of the proposed project. The nearest agricultural residence is approximately 1,500 feet from the Project Site. From this distance, the maximum exterior noise level is 55 dBA and the maximum interior noise level is 30 dBA (Table 3-8). Therefore, noise generated by construction activities would not exceed thresholds established by Kings County for sensitive receptors. Additionally, noise-producing construction activities will be limited to daytime hours and the project will comply with all County ordinances regarding construction-related noise levels and noise-generating equipment.

Operation of the proposed upgrading facility will generate noise levels of approximately 85 dBA. The nearest property line is approximately 85 feet from the proposed upgrading facility. At this distance, exterior noise levels will be approximately 80 dBA (See Table 3-8). The nearest sensitive receptor to this noise source is an agricultural residence approximately 5,000 feet northwest of the proposed upgrading facility. At this distance, exterior noise levels will be approximately 45 dBA and interior noise levels will be approximately 20 dBA (see Table 3-8). Operation of the proposed project will not generate noise in excess of 45 dBA for any other residences, as all other residences are over 5,000 feet from the proposed Project Site.

Because noise generated during project construction would be intermittent, short term, and would not exceed the thresholds established by Kings County for sensitive receptors, and noise generated from operation of the proposed project would not exceed thresholds established by the County for sensitive receptors, the impact is *less than significant*.

| Type of Equipment | Exterior Lmax at 50 feet (dBA) | Calculated Lmax at 85 feet ¹ (dBA) | Calculated Lmax at 1,500 feet ² (dBA) | | Calculated Lmax at 5,000 feet ³ (dBA) | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------|--------------------------------------------------|----------|--------------------------------------------------|----------|
| | | | Exterior | Interior | Exterior | Interior |
| Tractors | 84 | 79 | 54 | 29 | 44 | 19 |
| Loaders | 85 | 80 | 55 | 30 | 45 | 20 |
| Backhoes | 80 | 75 | 50 | 25 | 40 | 15 |
| Excavators | 81 | 76 | 51 | 26 | 41 | 16 |
| Generator Sets | 81 | 76 | 51 | 26 | 41 | 16 |
| Air Compressors | 81 | 76 | 51 | 26 | 41 | 16 |
| Plate Compactors | 82 | 77 | 52 | 27 | 42 | 17 |
| Forklifts | 75 | 70 | 45 | 20 | 35 | 10 |
| Welders | 74 | 69 | 44 | 19 | 34 | 9 |
| 1. Distance to nearest property line 2. Distance to nearest agricultural residence from Project Site. 3. Distance to nearest agricultural residence from proposed biogas upgrading facility. | | | | | | |

Table 3-8. Noise levels of noise-generating construction equipment at various distances. Source: Federal Highway Administration Construction Noise Handbook (dBA at 50 feet). Noise levels beyond 50 feet were estimated using the inverse square law based on given values for dBA at 50 feet.

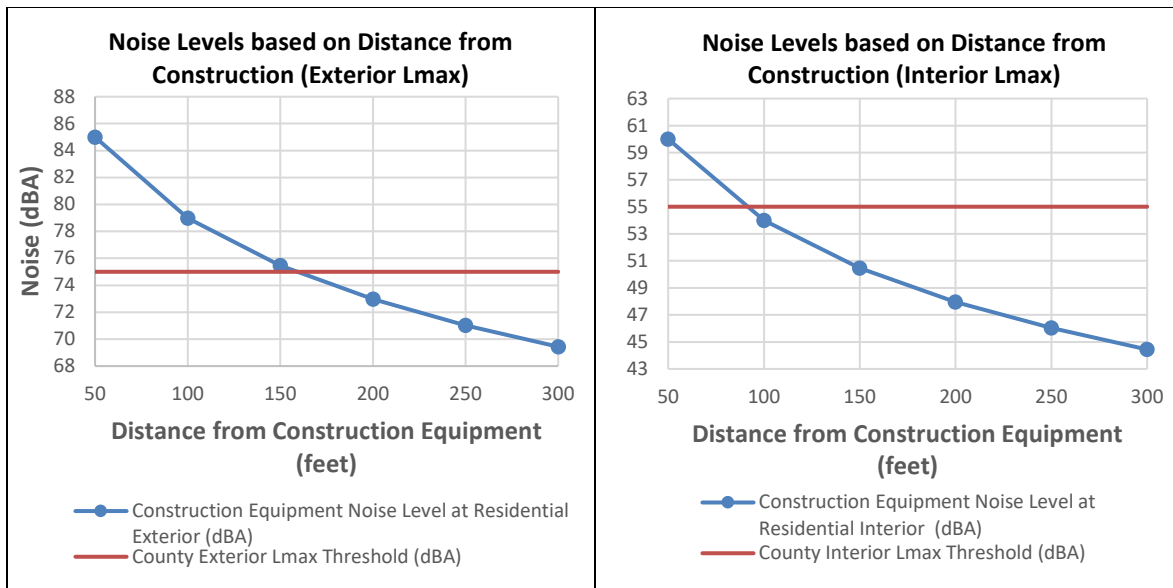


Figure 3-7. Construction-related noise levels based on distance from construction equipment. Interior noise levels assume 25 dB exterior to interior noise reduction.

b) Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact: There are seven agricultural residences within one-half mile of the Project Site that may be subject to some level of groundborne vibration during initial installation and future expansion of the proposed pipeline. However, this impact would be temporary and relatively insignificant, as ground borne vibration generated from project construction would be similar to groundborne vibration generated from other typical agricultural activities, and construction activities would be limited to daytime hours. Operation of the proposed biogas pipeline and biogas upgrading facility will not create any detectable groundborne vibration. Because construction-related groundborne vibration would be relatively insignificant, and operation of the proposed project would not result in increased ground-borne vibration or noise levels, the impact is *less than significant*.

c) For a project located within the vicinity or a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact: Kings County does have an Airport Land Use Compatibility Plan; however, the Project Site is not within an area covered by an airport land use plan and is not included within any Compatibility Maps for any public airport or public use airport. The Hanford Municipal Airport is the only public use airport remaining in Kings County and it is located approximately seven miles northwest of the Project Site. Future pipeline, if expanded within an airport land use planning area or within two miles of an airport, would not expose people to excessive noise levels since there will be no permanent on-site employees or residents associated with the underground pipeline. There is *no impact*.

XIV. POPULATION AND HOUSING

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The United States Census Bureau estimated the population in Kings County to be 151,366 as of July 2018. This is a slight decrease from the 2010 census, which estimated the population in Kings County to be 152,982. The population in Kings County is projected to grow by 15% between 2020 and 2030. Factors that influence population growth include job availability, housing availability, and the capacity of existing infrastructure.

Regulatory Setting

The Kings County population size is controlled by the Kings County Development Code and Land Use Element of the General Plan. These documents regulate the number of dwelling units per acre allowed on residential land uses and establish minimum and maximum lot sizes. These factors have a direct impact on the County's population size.

The Land Use Element of the 2035 Kings County General Plan highlights energy conservation opportunities as a factor affecting building and population growth. The Land Use Element also includes goals for preserving agricultural lands from premature urbanization. Other policies and goals of the 2035 General Plan include those that encourage growth in more urbanized areas of the County, as well as those that encourage preservation of agricultural uses and industries.

The Housing Element of the 2035 Kings County General Plan includes policies that address housing, employment, and growth management, as well as the adequate provision of resources, facilities, and services. The Housing Element contains a number of goals and policies intended to encourage continuous analysis and evaluation of population trends and housing needs to allow for the development of sites and facilities that sustain population growth in the county; encourage development in existing communities; and acknowledge the governmental, environmental, infrastructure, and land use constraints

Discussion

- a) **Would the project induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

No Impact: The construction and operation of the proposed biogas pipeline and biogas upgrading facility would not result in any substantial unplanned population growth or population displacement in Kings County. The project would not create any long-term employment opportunities that would lead to increased population growth, and no persons would be displaced as a result of project construction. Project operations would be conducted by existing CalBioGas Hanford, LLC Employees. Therefore, there is *no impact*.

- b) **Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

No Impact: The construction and operation of the proposed biogas pipeline and biogas upgrading facility would not result in existing residences being removed, and no individuals would be displaced because of the project. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. There is *no impact*.

XV. PUBLIC SERVICES

| Would the Project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services: | | | | |
| a. Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Fire: The Project Site is served by the Kings County Fire Department (KCFD), which operates 10 fire stations within unincorporated areas of the County and is headquartered in Hanford (2035 Kings County General Plan, Health and Safety Element). The KCFD has 88 full-time employees and responds to over 5,100 calls annually. The KCFD responds to a variety of calls, including structure, vehicle, wildland and grass fires, medical aids, traffic accidents, hazardous materials incidents and various public assistance calls.

Police: Law enforcement services are provided to the Project Site via the Kings County Sheriff's Department, which is headquartered in the City of Hanford. As noted in the Health and Safety Element of the 2035 Kings County General Plan, the County is currently divided into six beat districts with five Sheriff Sub-stations throughout Kings County. Each beat district has at least one deputy sheriff on duty at all times to serve the unincorporated communities and surrounding County areas. The California Highway Patrol provides traffic enforcement on State Highways and County roads. Kings County is within the California Highway Patrol's Central Division. The nearest CHP office to the Project Site is located in Hanford.

Schools: The proposed Project Site is located within the Hanford Joint Union School District. The nearest elementary school, Lakeside Union Elementary, is located approximately 3.8 miles northwest of the Project Site.

Regulatory Setting

The Hanford Joint Union School District is regulated by the California Department of Education and the Kings County Sheriff's Department is regulated by the California Department of Justice. Objectives and

Policies relating to Fire Protection are included in the Health and Safety Element of the 2035 Kings County General Plan. These Objectives and Policies are as follows:

- Health and Safety Objective B1.4 Provide local health services and emergency medical services in the County's Community Districts to meet the needs of a growing population.
 - HS Policy B1.4.3: Ensure that County Fire Department personnel remain trained and equipped to provide emergency medical services to those in need of such services within the unincorporated areas of the County.
- Health and Safety Objective C2.2. Provide quality fire protection services throughout the County by the Kings County Fire Department, and Fire safety preventative measures to prevent unnecessary exposure of people and property to fire hazards in both County Local Responsibility Areas and State Responsibility Area.
 - HS Policy C2.2.1: Community planning efforts should evaluate the projected need for Fire Department personnel and equipment and necessary funding support to maintain current levels of service as community growth occurs.
 - HS Policy C2.2.2: Development proposals and code revisions shall be referred to the County Fire Department for review and comment.
 - HS Policy C2.2.3: Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.
 - HS Policy C2.2.4: Review development proposals according to California Department of Forestry and Fire Protection "Fire Hazard Severity Zone Maps" to determine whether a site is located within a Very High Fire Hazard Severity Zone and subject to Wildland-Urban Interface Fire Area Building Standards and defensible space requirements as adopted under Senate Bill 1595 and effective January 1, 2009.
 - HS Policy C2.2.5: Forward for review and comment all proposed structures within the State Responsibility Area to the California Department of Forestry and Fire Protection within all State Responsibility Areas.
- Health and Safety Objective C3.3. Maintain sufficient operational area clearance for the Kings County Fire Department Heliport that serves Kings County Fire Department Search and Rescue helicopter and contracted helicopter ambulance services which are critical to emergency response and safety of people within the region.
 - HS Policy C3.3.1: Critically review new development proposals within a quarter mile of the Kings County Fire Department heliport to ensure compatibility of structures and uses with the operation of helicopters at County Fire Station No. 4.

Discussion

- a) **Would the project result in substantial adverse physical impacts associated with the provision or need of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services:**

a. Fire protection?

Less than Significant Impact: The Kings County Fire Department will provide fire protection services to the Project Site. The project will not result in the need for new facilities for the Kings County Fire Department because the project will not contribute to an increased population size within the Kings County Fire Department service area, nor will it extend the boundaries of the

Kings County Fire Department Service Area. Additionally, the applicant will be required to pay impact development fee to offset any potential impacts to existing Fire Department Facilities. The impact is therefore *less than significant*.

b. Police protection?

Less than Significant Impact: Kings County will provide police protection services to the Project Site. The project will not result in the need for new facilities for the Kings County Sheriff Department because the project will not contribute to an increased population size within the Kings County Sheriff Department service area, nor will it extend to the boundaries of the Kings County Sheriff Department Service Area. Additionally, the applicant will be required to pay an impact development fee to offset any potential impacts to existing Sheriff Department Facilities. The impact is therefore *less than significant*.

c. Schools?

No Impact: The project will not result in additional residents to Kings County and will not increase the number of students in the school district. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. Therefore, there is *no impact*.

d. Parks?

No Impact: Because the project will not result in additional residents, the project will not create a need for additional parkland. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. Therefore, there is *no impact*.

e. Other Public Facilities?

No Impact: The proposed project will not result in addition residents or create additional jobs. The project will not create the need for other public facilities to be expanded. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. There is *no impact*.

XVI. PARKS AND RECREATION

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Burnham Smith Park is the closest recreational area to the Project Site and is located in the City of Corcoran. Kings County presently owns and maintains three parks (Burriss, Hickey, and Kingston) which are located in the north portions of the County and surrounded by agricultural areas.

Regulatory Setting

Kings County General Plan: The Open Space Element of the 2035 Kings County General Plan contains the following objectives and policies relating to parks and recreation.

- Open Space Objective D1.1 Maintain and enhance the existing County park system within available funding constraints.
 - OS Policy D1.1.1: Apply the "Public/Quasi-Public" land use designation to County parks.
 - OS Policy D1.1.2: Community Plans should facilitate the development and maintenance of community park(s) within Community District areas to expand recreational resources available to residents.
 - OS Policy D1.1.3: Support community involvement that builds capacity for the long-term maintenance and upkeep of open space and community park space within Community Districts.
- Open Space Objective D1.2 Encourage the development of private recreational facilities compatible with the rural character of Kings County.
 - OS Policy D1.2.1: Support the establishment of new commercial recreational development, provided it is compatible with surrounding land uses and the intensity of such development does not exceed the ability of the natural environment of the site and the surrounding area to accommodate it. Such facilities may include, but are not limited to campgrounds, recreational camps, hotels and destination resorts, ball courts and ball fields, skeet clubs and facilities, hunting and fishing clubs, and equestrian facilities.

Discussion

- a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No Impact: The project will not result in additional residents, so the project will not increase the use of existing parkland or create need for additional parkland. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. Therefore, there is no *impact*.

- b) **Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

No Impact: There are no parkland or recreational facilities associated with the project. The project will not result in additional residents and the project will not create need for additional parkland. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. Therefore, there is no *impact*.

XVII. TRANSPORTATION

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with a program, plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, including transit, roadway, bicycle and pedestrian facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

Transportation facilities within the vicinity of the proposed project area include Highway 43, 6th Avenue, Kansas Avenue, 10 ½ Avenue, Lansing Avenue, and railroad right-of-way. The Kings County Association of Governments (KCAAG) is the County's Regional Transportation Planning Agency and Metropolitan Planning Organization.

The County assesses the acceptability of roadways using Level of Service (LOS). The County has an LOS threshold of "E" for urban roads and an LOS threshold of "D" for rural roads. Table 7 provides a description and LOS rating of the roads involved in the project. Since the segments of Lansing Avenue and 6th Avenue within the vicinity of the proposed project do not have documented LOS and AADT in the County's Circulation Element, it can be assumed they have similar LOS and AADT to 10 ½ Avenue due to their similarities in characteristics commonly found in a rural minor road.

| Name | No. of Lanes | Description | LOS (2006) | AADT (2006) |
|------------------------|--------------|----------------|------------|-------------|
| SR 43 | 2 | Minor Arterial | C | 6300 |
| Lansing Avenue | 2 | Minor Road | N/A | N/A |
| 6 th Avenue | 2 | Minor Road | N/A | N/A |
| 10 ½ Avenue | 2 | Rural Minor | B | 2900 |
| Kansas Avenue | 2 | Minor Arterial | B | 3270 |

Table 3-9. Roads within the Vicinity of the Project Site; Source: Kings County General Plan, Circulation Element

Regulatory Setting

Kings County Improvement Standards: The Kings County Improvement Standards are developed and enforced by the Kings County Public Works Department to guide the development and maintenance of

County Roads. The cross-section drawings contained in the County Improvement Standards dictate the development of roads within the county.

Kings County General Plan: The Circulation Element of the 2035 Kings County General Plan requires a minimum LOS rating of “D” for rural roads and “E” for urban roads, which can be found on page C-59 (Circulation Element, 2035 Kings County General Plan).

CEQA guidelines Section 15064.3 (b) - Criteria for Analyzing Transportation Impacts: Section 16064.3 (b) of the CEQA guidelines establishes the following criteria for analyzing transportation impacts.

1. **Land Use Projects.** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.
2. **Transportation Projects.** Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.
3. **Qualitative Analysis.** If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project’s vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
4. **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project’s vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project’s vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Discussion

- a) **Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?**

No Impact: The project would not conflict with any adopted programs, plans, ordinances, or policies addressing transit, bicycle, or pedestrian facilities. The project is within a remote land use area and the project would not require public transit, or non-motorized transportation facilities during construction and operation. This impact would not be increased as a result of the expansion of the biogas upgrading facility to increase the capacity from 1,500 scfm to 3,000 scfm or the future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. The project will adhere to all design standards established by

the County. Any future expansion of the pipeline network will also adhere to all design standards established by the County.

The project is consistent with the County Circulation Element Level of Service thresholds. Peak construction is estimated to generate a maximum of 33 trips per day. Because this increase will not result in traffic volumes exceeding Level of Service Threshold volumes shown on Table C-3 of the County Circulation Element, and Level of Service will not fall below LOS D on County Roads or LOS C on SR-43, the project does not conflict with any plans or ordinances regarding the effectiveness of the circulation system. There is *no impact*.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

Less than Significant Impact:

Section 15064.3(b) establishes criteria for analyzing transportation impacts of proposed projects, as required under AB 734. This section states that “vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.” The establishment of specific significance thresholds is left up to each lead agency. Kings County has not established VMT significance thresholds as of September 2019.

A Technical Advisory was issued by the Governor’s Office of Planning and Research (OPR) in 2018 to guide the implementation of AB 734. The Technical Advisory states that, in general, projects that generate fewer than 110 trips per day may be assured to cause a less than significant transportation impact. For construction-related VMT, The Technical Advisory states that a qualitative analysis is appropriate for many projects.

During construction, approximately 30 worker trips and 0.43 vendor trips will be generated per day, totaling approximately 515 VMT per day. This increase in VMT would be temporary and relatively insignificant in comparison to the total daily VMT in Kings County. Additionally, the impacts associated with construction-related VMT would be offset by the benefits the proposed biogas upgrading facility will have on air quality during project operations.

It is anticipated that operation of the proposed upgrading facility will generate approximately 3 employee trips per day, totaling 120 miles. Because the project would generate fewer than the threshold of 110 trips per day as established by the OPR Technical Advisory, this increase in VMT during project operations would be considered less than significant under CEQA.

The proposed project would result in a small increase in VMT during project construction and operations. Because VMT increases during project construction would be relatively small, temporary, and offset by the project’s overall benefit to air quality, and VMT generated during project operations would not exceed thresholds established by the OPR technical advisory, the impact is *less than significant*.

- c) **Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

Less than Significant Impact with Mitigation Incorporation: The proposed project would encroach on public Right-of-Way (ROW) as the proposed pipeline crosses 6th Avenue, 7th Avenue, 10 ½ Avenue, Highway 43, and Lansing Avenue (See Appendix D). The pipeline would be buried approximately 6 ft. below the road surface. Encroachment on public ROW could create a public hazard if the pipeline ruptured under the ROW area. However, implementation of Mitigation Measure TRANS-1, TRANS-2, and TRANS-3 would greatly reduce the likelihood of pipeline rupture, thus reducing this impact to a *less than significant level*.

Mitigation Measure TRANS-1: A detectable underground warning tape will be installed above the pipeline where the pipeline crosses public ROW to notify anyone digging in the area of the deeper pipe. Signage will also be provided along the pipeline at half mile intervals to provide notice of the buried pipe.

Mitigation Measure TRANS-2: Physical barriers are included in the pipeline's design to ensure that the pipeline is not damaged, even if the notification measures described in Mitigation Measure Trans-1 are unsuccessful. At all locations where the pipeline crosses public ROW, the pipeline will be sleeved through a steel pipe for the entire expanse of the right of way. Additionally, a 6" thick concrete barrier will be installed approximately 2 feet above the pipeline. This would be done so that a backhoe, or other digging equipment, would hit something solid before hitting the pipeline.

Mitigation Measure TRANS-3: An Operations and Maintenance Program will be developed and followed to inspect and pressure-test the pipeline. Monitoring will occur during construction and on an annual basis during project operations.

- d) **Would the project result in inadequate emergency access?**

Less than Significant Impact: This project would not result in inadequate emergency access. Emergency access to the site would be via Highway 43, 6th Avenue, Kansas Avenue, 10 ½ Avenue, and Lansing Avenue. These roads provide full access to the entire Project Site. During construction the project may slightly impact congestion for approximately 0.5 miles on Highway 43, however this congestion would not exceed acceptable LOS thresholds established by the Circulation Element of the Kings County General Plan. Emergency access will be required for any future pipeline expansion projects. Emergency access is not expected to be impacted by the project and impacts would be *less than significant*.

XVIII. Tribal Cultural Resources

| Would the project: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------|------------------------------|--------------------------|
| a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The Hanford Biogas Cluster Project Site is located adjacent to the former shoreline of the Tulare Lake in the San Joaquin Valley, an area occupied by humans for more than 10,000 years. Ethnographically, the Project area was occupied by the Tachi-Yokut Tribe for which the Santa Rosa Rancheria was created in 1934. Numerous cultural resource sites have been identified in Kings County. These sites include the original site of the Yokut Tribe Cemetery and a Witt archaeological site.

Cultural Resources Record Search, Class III Inventory and Phase 1 Survey: A records search was conducted on behalf of the Applicant at the Southern San Joaquin Valley Archaeological Information Center (AIC), to determine if historical or archaeological sites had previously been recorded within the study area, if the project area had been systematically surveyed by archaeologists prior to the initial study, and/or whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. The AIC results indicated that three previous cultural resource studies have been completed that cross through the project area and no additional surveys were conducted within 0.5 miles of the Project Site. Previous surveys identified three cultural resources within the Project Site, and two cultural resources found within 0.5 miles radius of the Project Site.

A Class III Archaeological Inventory/Phase I survey was conducted for the proposed project by ASM Affiliates in September 2019. The study included a records search at the Native American Heritage Commission (NAHC) Sacred Lands File and outreach to the tribal contact list provided by the NAHC. The records search found that there were no known sacred sites or tribal cultural resources within the APE, however a burial site is located within one-half mile of the proposed project site. The Santa Rosa Rancheria

Tachi-Yokut Tribe responded to tribal outreach by email, expressing concern about the Project and requesting that a tribal monitor be present during Project construction. The full Cultural Report can be found in Appendix C.

Regulatory Setting

Definitions

Tribal Cultural Resource (TCR). Section 21074 of the California Public Resources Code states that Tribal Cultural Resources can include site features, places, cultural landscapes, sacred places, or objects, which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register, or determined by the lead agency to be treated as TCR.

Discussion

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a. **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**

Less than Significant Impact with Mitigation Incorporation: Based on the results of the records search and Native American outreach, no previously recorded Tribal Cultural Resources listed or eligible for listing in the California Register of Historic Resources are located within the Project Site. Although no Tribal cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6, CUL-7 and CUL-8 as outlined within the MMRP, will ensure that impacts to Tribal Cultural Resources will be *less than significant with mitigation* incorporation.

- b. **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Less than Significant Impact with Mitigation Incorporation: Based on the results of the records search and Native American outreach, no known Tribal cultural resources are located within the Project Site. In regards to the Project Site Kings County has not made any determination of resources pursuant to criteria set forth in Subdivision (c) of Public Resources Code Section 5024.1. Although no Tribal cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6, CUL-7 and CUL-8 will ensure that impacts to this checklist item will be *less than significant with mitigation* incorporation.

XIX. UTILITIES AND SERVICE SYSTEMS

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Wastewater: Wastewater generated within the project area is contained and treated on-site. No additional wastewater treatment services will be required as a result of project implementation.

Solid Waste: Solid waste collection and disposal service in Kings County is provided by the Kings Waste and Recycling Authority (KWRA). The KWRA was formed in 1998 by agreement between Kings County and the cities of Lemoore, Hanford, and Corcoran. Solid waste from the member jurisdictions is transported to KWRA Materials Recovery Facility in Hanford where wastes are separated for recycling, composting, or landfill disposal. Commercial solid waste is collected by private contract with licensed haulers. Used construction and demolition material is accepted at several approved facilities in the region.

Non-recyclable materials are transferred to the B-17 Landfill Unit at the Chemical Waste Management, Inc. (CWMI) Kettleman Hills Facility located on SR-41 in Kettleman Hills. The B-17 Landfill Unit has a maximum disposal rate of 2,000 tons per day, and currently accepts an average of 1,350 tons per day (<http://kettlemanhillslandfill.wm.com/fact-sheets/2011/facility-overview.jsp>).

The total permitted capacity of B-17 Landfill Unit is 18.4 million cubic yards according to Page 2-3 in Section 2.3 of the Draft Subsequent Environmental Impact Report (DSEIR) for Conditional Use Permit (CUP) No. 04-01 for the B-17 Landfill Project. The Waste Management Kettleman Hills B-17 Landfill 2016 Airspace Report (www.calrecycle.ca.gov/SWFacilities/Directory/16-AA-0021/Document/306996) lists a remaining capacity of approximately 15,843,300 cubic yards for B-17.

Page 2-3 in Section 2.3 of the DSEIR for CUP No. 04-01 for the B-17 Landfill Project also states that the facility will be permitted to receive up to 2,000 tons per day of non-hazardous waste (municipal solid waste and designated waste) for disposal, 6 days per week (except Sundays) from 8:00 a.m. until 6:00 p.m. There is no limit on Class II soils that are received for beneficial use, such as daily or intermediate cover, or wastes received for use alternative daily cover (ADC).

Water: Existing water entitlements currently provide water to the proposed Project Site. Implementation of the proposed project will not require additional water entitlements.

Stormwater: Stormwater will be contained on-site. No additional stormwater facilities will be required as a result of project implementation.

Electric Power and Natural Gas: The proposed biogas upgrading facility will require new electrical service through PG&E. No natural gas services will be required.

Telecommunication Facilities: The system will have the capability to monitor various components remotely, through the use of cellular data. Monitored components include, but are not limited to, gas volume, gas quality and system pressures at the Upgrading Facility Site. Automated triggers and alarms shall be in place to remotely alert staff if any components are operating outside of set limits.

Regulatory Setting

CalRecycle: California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB: The Central Valley RWQCB requires a Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a SWPPP to manage stormwater generated during project construction will be required.

The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.

The Central Valley RWQCB is also responsible for implementing the federal program, the National Pollutant Discharge Elimination System (NPDES). The NPDES Program is the federal permitting program that regulates discharges of pollutants to surface waters of the U.S. Under this program, a NPDES permit is required to discharge pollutants into Waters of the U.S. There are 350 permitted facilities within the Central Valley Region.

Discussion

- a) **Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or expansion of which could cause significant environmental effects?**

No Impact: Water used during construction and operations for purposes of dust control would be promptly absorbed by the pervious ground surface. The project would not produce wastewater or runoff that would require disposal or treatment off-site and no construction or expansion of off-site wastewater, natural gas, or telecommunications facilities would be required as a result of the project. The proposed project will require electrical service from PG&E. This supplier has an excess supply of electricity and would not need to construct new electric generation facilities as a result of the proposed project. Therefore, there would be *no impact*.

The site will need to meet County Improvement Standards which may require improvements for stormwater. The terrain of the Project Site is virtually flat and the project will result in no substantial modification of existing site grades. The project will introduce very few structural elements with impervious surfaces that would impede direct percolation of rainwater into the soil. The proposed biogas upgrading facility would be installed on various concrete pads totaling approximately 31,878 which would act as an impervious surface. During normal rain events, runoff from impervious surfaces would be absorbed by the adjacent vegetated ground and percolate into the soil. During more intense or prolonged storm events, the ground would become saturated and relatively minor volumes of stormwater may temporarily pond on the surface and gradually percolate into the ground, as occurs under existing conditions. Due to the virtually level ground conditions, and the very minor introduction of impervious surfaces to the site by the project, the potential for stormwater to be mobilized and concentrated in sustained runoff flows is unlikely to occur. Therefore, the project would not require the construction of new stormwater drainage facilities. As such, the project would result in *no impact* relative to construction or expansion of stormwater drainage facilities.

- b) **Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**

No Impact: Additional water entitlements are not proposed for the site. During project construction, water use is estimated to be approximately 0.12 acre-feet/acre/month. This water will be used primarily for dust control and will be provided by water trucks, no additional water entitlements will be required. During operations, the proposed project will not use any water for the biogas upgrading process, however approximately 10 gallons per day would be used for periodic equipment cleaning and other miscellaneous maintenance tasks. Existing water supplies are sufficient to meet this demand during normal, dry and multiple dry years. No additional water entitlements will be required. Future expansion of the proposed pipeline network would result in additional construction-related water use; however, it would not result in increased operational water use. Construction-related water use for pipeline expansion is estimated to be approximately 0.12 acre-feet/acre/month. This water would be supplied by water trucks and no additional water entitlements will be required.

Because the site's existing entitlements are sufficient to meet the project's operational water demand, and water used during construction will be provided by water trucks, no new or expanded entitlements are needed for the proposed project and the impact. There is *no impact*.

- c) **Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

No Impact: No wastewater will be produced as a result of project implementation and no septic system or other disposal facilities would be required. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. There would be *no impacts* to the applicable wastewater treatment provider.

- d) **Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

Less than Significant Impact: Waste Management will be provided by Kings Waste and Recycling Authority. Very little solid waste is anticipated as a result of project implementation, and the landfill has sufficient permitted capacity to accommodate the project's solid waste disposal needs. This impact would not be increased as a result of future expansion of the proposed pipeline network to connect additional dairies to the proposed biogas upgrading facility. The impact is *less than significant*.

- e) **Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

No Impact: The proposed project would comply California Integrated Waste Management Act of 1989 (AB 939), which requires each city and county in California to prepare, adopt, and implement a Source Reduction and Recycling Element. Policies pertaining to solid waste, source reduction, and recycling are identified in the Source Reduction and Recycling Element (SRRE) and the Household Hazardous Waste Element (HHWE) of the Kings County Integrated Waste Management Plan. The KWRA serves all County unincorporated areas, and the Cities of Corcoran, Hanford and Lemoore. Municipal waste generated in these areas are first directed to the KWRA facility and then transferred to the Chemical Waste Management, Inc. Kettleman Hills Facility which operates both municipal waste and hazardous waste landfills at their site located west of Interstate 5 along State Route 41.

As described above, materials would be disposed of at MSW Landfill B-17, in Kettleman City, California, which is permitted by Kings County and inspected monthly by the Kings County Health Department, Environmental Health Services Division. Some construction waste would be recycled at the KWRA Material Recovery Facility and Transfer Station as possible, prior to the remainder of the waste being disposed of at MSW Landfill B-17. Any hazardous materials and wastes would be recycled, treated, and disposed of in accordance with federal, state, and local laws. Therefore, there would be *no impacts* under this criterion.

XX. WILDFIRE

| If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------|-------------------------------------|-------------------------------------|
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

According to the Fire Hazard Severity Zone map provided by the California Department of Forestry and Fire Protection (Cal Fire), the project is not located in or near state responsibility areas or lands classified as very high fire severity zones. The Project Site is located approximately 25 miles north-west of the closest very high fire hazard severity zone in a state responsibility area. The Project Site and its surrounding areas are developed for agricultural uses and are not susceptible to wildfires.

Regulatory Setting**Definition**

Fire hazard severity zones: geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189.

Kings County Emergency Operations Plan (2015): The Kings County Emergency Operations Plan establishes goals, priorities, and strategies in the event of an emergency. The goals and priorities are outlined below.

2.1 Goals, Priorities and Strategies : During the response phase, emergency managers set goals, prioritize actions and outline operational strategies. This plan provides a broad overview of those goals, priorities and strategies, and describes what should occur during each step, when, and at whose direction.

2.1.1 Operational Goals: During the response phase, the agencies that are charged with responsibilities in this plan should focus on the following five goals:

- Mitigate hazards.
- Meet basic human needs.
- Address needs of people with disabilities and others with access and functional needs.
- Restore essential services.
- Support community and economic recovery.

2.1.2 Operational Priorities : Operational priorities govern resource allocation and the response strategies for the County of Kings and its political subdivisions during an emergency. Below are operational priorities addressed in this plan.

- Save Lives – The preservation of life is the top priority of emergency managers and first responders, and takes precedence over all other considerations.
- Protect Health and Safety – Measures should be taken to mitigate the impact of the emergency on public health and safety.
- Protect Property – All feasible efforts must be made to protect public and private property and resources, including critical infrastructure, from damage during and after an emergency.
- Preserve the Environment – All possible efforts must be made to preserve California's environment and protect it from damage during an emergency.

Discussion

- a) **Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?**

No Impact: The Project Site falls under Kings County Operational Area. Kings County has established an Emergency Operations Plan detailing multi-jurisdictional and interagency coordination during emergency operations. The project will be reviewed by the County's Fire Chief to ensure that the project does not impair emergency response or emergency evacuation. There is *no impact*.

- b) **Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?**

No Impact: The Kings County Multi-Jurisdictional Local Hazard Mitigation Plan describes Kings County as mostly flat with a gentle sloping towards a topographic low point in the Tulare Lake Basin. Thus, the topography of Kings County reduces fire hazard throughout most of the County.

The project would not exacerbate wildfire risks and expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. There is *no impact*.

- c) **Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**

Less than Significant Impact: The project involves the construction, installation and operation of a 7.3-mile underground pipeline, which will connect anaerobic digesters at Cloverdale Dairy, Wreden Ranch Dairy, and Hollandia Dairy to a proposed biogas upgrading facility. Construction and operations related activities will comply with the California fire code, local building codes, and gas pipeline regulations. The Kings County Fire Department will be responsible for enforcing provisions of the fire code, and the safety of gas transmissions through pipelines will be regulated through the California Public Utilities Code. The biogas treatment facilities will also include safety flares to reduce excess gas storage. The impact is *less than significant*.

- d) **Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

Less than Significant Impact: The proposed project will not alter existing drainage patterns or increase surface runoff in a manner that could result in flooding on or off site. The project area is generally flat and no significant grading or leveling will be required. Added impervious surfaces will be limited to the footprint of the proposed biogas upgrading facility and all stormwater will be contained on-site. This impact would not be increased if the proposed pipeline network were expanded to connect additional dairies to the proposed biogas upgrading facility. Since the proposed project will not expose people or structures to downslope or downstream flooding or landslides, the impact is *less than significant*.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------|-------------------------------------|--------------------------|
| a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

- a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact with Mitigation Incorporation: This initial study/mitigated negative declaration found the project could have significant impacts on biological and cultural resources. However, implementation of the identified mitigation measures for each respective section would ensure that impacts are *less than significant with Mitigation Incorporation*.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

Less than Significant Impact: CEQA Guidelines Section 15065(a) states that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature of the project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increase need for housing, increase in traffic, air pollutants, etc.)

As described in the impact analysis in Sections I through XVII above, any potentially significant impacts of the proposed project would be reduced to a less-than-significant level following incorporation of the mitigation measures listed in the Mitigation Monitoring and Reporting Program. All pending, approved, and completed projects in the vicinity of the proposed project would be subject to review in separate environmental documents and required to conform to the 2035 Kings County General Plan, the Kings County Development Code, mitigate for project-specific impacts, and provide appropriate engineering to ensure the development meets all applicable federal, State and local regulations and codes. As currently designed, and by complying with the recommended mitigation measures, the proposed project would not contribute to a cumulative impact. Thus, the cumulative impacts of pending, approved, and completed projects would be less than cumulatively considerable. Impacts would be *less than significant*.

- c) **Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?**

Less than Significant Impact: The ways in which people can be subject to adverse effects from the project includes: potential exposure to valley fever spores; potential ground shaking; potential exposure to contamination from hazardous materials; and potential exposure to traffic hazards during construction. The analyses of environmental issues contained in this Initial Study indicate that the project is not expected to have substantial impact on human beings, either directly or indirectly. Mitigation measures have been incorporated in the project design to reduce all potentially significant impacts to less than significant, which results in a *less than significant* impact to this checklist item.

XXII. MITIGATION MONITORING AND REPORTING PROGRAM

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the project in order to monitor the implementation of the mitigation measures that have been adopted for the project. This Mitigation Monitoring and Reporting Program (MMRP) has been created based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Hanford Biogas Cluster Project proposed by California Bioenergy in Kings County.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column, "Timing of Mitigation Measure" identifies the time the mitigation measure should be initiated. The fourth column, "Responsible Party for Monitoring," names the party ensuring that the mitigation measure is implemented. The last column will be used by the County to ensure that the individual mitigation measures have been monitored.

Plan checking and verification of mitigation compliance shall be the responsibility of Kings County.

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------|----------------------------------|--------------|
| Mitigation Measure AIR-1: Implement the Dust Control Plan required to be approved for the project by the San Joaquin Valley Air Pollution District under District Rule 8021 prior to ground disturbing activity | Project Sponsor | Prior to the start of construction. | Kings County | |
| Mitigation Measure AIR-2: When exposure to dust is unavoidable for workers who will be disturbing the top 2-12 inches of soil, provide workers with NIOSH-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or HEPA, as recommended in the California Department of Public Health publication " <i>Preventing Work-Related Coccidioidomycosis (Valley Fever)</i> " | Project Sponsor | Ongoing during construction. | Kings County | |
| Mitigation Measure BIO-1a: Burrow Avoidance. In the absence of adequate surveys to determine Tipton kangaroo rat presence or absence, the project will observe a minimum 50-foot no-disturbance buffer around all small mammal burrows in grassland habitat. | Project Sponsor | Ongoing during construction. | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
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| Mitigation Measure BIO-1b: Tipton Kangaroo Rat Surveys. If burrow avoidance is not feasible, focused protocol-level trapping surveys will be conducted by a qualified wildlife biologist that has been issued the appropriate permits by CDFW and USFWS to determine if Tipton kangaroo rats occur within the non-native grassland habitat of the Project Site. These surveys will be conducted in accordance with USFWS 2013 Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats well in advance of ground-disturbing activities. | Project Sponsor | Prior to the start of construction and ongoing during construction. | Kings County | |
| Mitigation Measure BIO-1c: Take Authorization. If the Tipton kangaroo rat is identified during the protocol-level surveys, the project applicant will consult with CDFW and USFWS to determine if take can be avoided. If take cannot be avoided, the project applicant will obtain Incidental Take Authorization from CDFW and USFWS before initiating any project activities in the non-native grassland habitat. | Project Sponsor | Prior to the start of construction and ongoing during construction. | Kings County | |
| Mitigation Measure BIO-2a: Construction Timing. In order to avoid impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside the nesting season, conservatively defined as February 1-September 15. | Project Sponsor | Ongoing during construction. | Kings County | |
| Mitigation Measure BIO-2b: Preconstruction Surveys. If project-related activities must occur between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for active Swainson's hawk nests within ½ mile of the site in accordance with the SHTAC (2000) guidelines. The guidelines define five survey periods for Swainson's hawk: Period I: January 1-March 20; Period II: March 20-April 5; Period III: April 5-April 20; Period IV: April 21-June 10; and Period V: June 10-July 30. The guidelines prescribe a minimum of three surveys per survey period for at least the two survey periods immediately prior to a project's initiation, and specifically recommend that surveys be completed in Periods II, III, and V. Consistent with CDFW recommendations, an additional take avoidance survey for the Swainson's hawk will be conducted no more than 10 days prior to the start of construction. | Project Sponsor | Within 10 days prior to the start of construction. | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
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| Mitigation Measure BIO-2c: Avoidance of Active Nests. Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established based on local conditions and species biology. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently. | Project Sponsor | Ongoing during construction. | Kings County | |
| Mitigation Measure BIO-3a: Pre-construction Surveys. Preconstruction surveys for the San Joaquin kit fox shall be conducted on and within 200 feet of the Project Site, no less than 14 days and no more than 30 days prior to the start of ground disturbance activities on the site. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on and adjacent to the site and evaluate their use by kit foxes. | Project Sponsor | Within 14 days prior to the start of construction. | Kings County | |
| Mitigation Measure BIO-3b: Avoidance. Should active kit fox dens be detected during preconstruction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned. | Project Sponsor | Ongoing during construction. | Kings County | |
| Mitigation Measure BIO-3c: Minimization. Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes in accordance with the USFWS Standardized Recommendations. The applicant shall implement all minimization measures presented in the Construction and On-going Operational Requirements section of the Standardized Recommendations, including, but not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g. pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash. See Appendix D for more details. | Project Sponsor | Ongoing during construction | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
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| Mitigation Measure BIO-3d: Employee Education Program. Prior to the start of construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation. The training will include a handout with all of the training information included in it. The applicant will use this handout to train any construction personnel that were not in attendance at the first meeting, prior to those personnel starting work on the site. | Project Sponsor | Prior to the start of construction | Kings County | |
| Mitigation Measure BIO-3e: Mortality Reporting. The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information. | Project Sponsor | Ongoing during construction | Kings County | |
| Mitigation Measure BIO-4a: Take Avoidance Survey. A take avoidance survey for burrowing owls will be conducted by a qualified biologist between 14 and 30 days prior to the start of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). | Project Sponsor | 14-30 days prior to the start of construction | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
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| Mitigation Measure BIO-4b: Avoidance of Active Nests and Roosts. If project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer will be established around these burrows. During the non-breeding season (September 1-January 31), resident owls occupying burrows in or near project impact areas will be avoided through the establishment of a 50-meter disturbance-free buffer or passively relocated to alternative habitat as described below. Smaller buffer areas during the non-breeding season may be implemented with the presence of a qualified biological monitor during all activities occurring within 50 meters of occupied burrows. Buffers will remain in place for the duration of project activities occurring within the vicinity of burrowing owl activity. | Project Sponsor | Ongoing during construction | Kings County | |
| Mitigation Measure BIO-4c: Passive Relocation of Resident Owls. During the nonbreeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat. This activity would be conducted in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50-foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50-foot buffer and up to 50 meters outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50-foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows and 5) removing the doors and excavating the remaining burrows within the 50-foot buffer. | Project Sponsor | Prior to the start of construction and ongoing during construction | Kings County | |
| Mitigation Measure BIO-5a: Avoidance. In order to avoid impacts to nesting raptors and migratory birds, the project will be constructed, if feasible, from September 16th and January 31st,, which is outside the avian nesting season. | Project Sponsor | Ongoing during construction | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------|----------------------------------|--------------|
| Mitigation Measure BIO-5b: Preconstruction Surveys. If project activities must occur during the nesting season (February 1-September 15), a qualified biologist will conduct preconstruction surveys for active raptor and migratory bird nests within 10 days prior to the start of these activities. The survey will include the proposed work area(s) and surrounding lands within 500 feet, where accessible, for all nesting raptors and migratory birds. If no active nests are found within the survey area, no further mitigation is required. | Project Sponsor | Within 10 days prior to the start of construction | Kings County | |
| Mitigation Measure BIO-5c: Establish Buffers. Should any active nests be discovered near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Any tricolored blackbird colonies identified on or adjacent to the site will be protected by a minimum 300-foot construction setback in accordance with Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015 (CDFW 2015). Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. | Project Sponsor | Prior to the start of construction and ongoing during construction | Kings County | |
| Mitigation Measure CUL-1: Representatives from the Santa Rosa Rancheria Tachi-Yokut Tribe will be invited to survey the site for signs of surface or subsurface cultural resources prior to the start of construction activities. | Project Sponsor | Within 30 days prior to the start of construction. | Kings County | |
| Mitigation Measure CUL-2: Project construction workers will be required to participate in a Cultural Sensitivity Training program provided by the Santa Rosa Rancheria Tachi-Yokut Tribe's Cultural Department. This program is intended to increase awareness of cultural resources that may be found on the site and inform construction workers of their responsibility to identify and protect cultural resources found within the project area. | Project Sponsor | Within 60 days prior to the start of construction. | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------|----------------------------------|--------------|
| Mitigation Measure CUL-3: If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983) should be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA, additional work such as data recovery excavation and Native American consultation may be warranted to mitigate any adverse effects. | Project Sponsor | Ongoing during construction. | Kings County | |
| Mitigation Measure CUL-4: The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. | Project Sponsor | Ongoing during construction. | Kings County | |
| Mitigation Measure CUL-5: Archaeological Monitoring. Prior to any ground disturbance, a surface inspection of the Project Site shall be conducted by a qualified archeologist. The qualified archeologist shall monitor the site during ground disturbing activities. The archeologist shall provide pre-construction briefings to supervisory personnel, any excavation contractor, and any person who will perform unsupervised, ground disturbing work on the project in connection with construction. These meetings will include information on potential cultural material findings and how to act on the procedures if resources are found. | Project Sponsor | Within 60 days prior to the start of construction and ongoing during construction. | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
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| Mitigation Measure CUL-6: Native American Monitoring. Prior to any ground disturbance, the applicant shall offer interested Tribes the opportunity to provide a Native American Monitor during ground disturbing activities during construction. Tribal participation would be dependent upon the availability and interest of the Tribe. | Project Sponsor | Within 60 days prior to the start of construction. | Kings County | |
| Mitigation Measure CUL-7: Stop Work in the Event of Unanticipated Discoveries. In the event that cultural resources, paleontological resources or unique geologic features are discovered during construction, operations shall stop within 100 feet of the find, and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall determine the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with §15064.5 of the CEQA Guidelines. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing, and data recovery, among other options. Any previously undiscovered resources found during construction within the Project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist. Prior to any ground disturbance, the applicant shall enter into an agreement with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe") regarding cultural resources and burial treatment and protection ("Plan"), which shall be in a form acceptable to the Tribe and the County. Upon discovery of cultural resources, in addition to other procedures described in this mitigation measure, the Kings County Community Development Agency, along with other relevant agency or Tribal officials, shall be contacted to begin coordination on the disposition of the find(s), and treatment of any significant cultural resource shall be undertaken pursuant to the Plan. In the event of any conflict between this mitigation measure and the Plan, the stipulations of the Plan shall control. | Project Sponsor | Ongoing during project construction | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------|----------------------------------|--------------|
| Mitigation Measure CUL-8: Upon coordination with the Kings County Community Development Agency, any archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded long-term preservation. Documentation for the work shall be provided in accordance with applicable cultural resource laws and guidelines. | | | | |
| Mitigation Measure GEO-1: Prior to final design and issuance of building permits, a geotechnical study shall be prepared for the Project Site and recommendations of the study shall be incorporated into final design of the project. A copy of the report shall be submitted to the Kings County Community Development Agency for review. If the pipeline is expanded in the future to connect additional dairies to the proposed biogas upgrading facility, a geotechnical study shall be prepared for the proposed expansion site. | Project Sponsor | Prior to the start of construction and ongoing during construction | Kings County | |
| Mitigation Measure HAZ-1: Installation of a supervisory control and data acquisition (SCADA) system shall be established and maintained for the operational life of the project. The SCADA system will monitor operating pressures, temperatures and flow rates, and in the event of off-specification conditions, the SCADA system will automatically initiate a controlled plant shutdown. The plant shall also be equipped with emergency stop (E-stop) buttons at key locations, which will allow the operator to directly initiate a plant shutdown. | Project Sponsor | Ongoing during project operations | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------|----------------------------------|--------------|
| <p>Mitigation Measure HYD-1: Stormwater Quality Protection: Prior to project construction, the applicant shall be required to file a "Notice of Intent" (NOI) with the SWRCB to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be prepared by a licensed engineer and shall detail the treatment measures and best management practices (BMPs) to control pollutants that shall be implemented and complied with during project construction. Example SWPPP measures may include the following:</p> <ul style="list-style-type: none"> • Preserve existing vegetation where required and when feasible • Reseeding vegetation, where appropriate • Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding, or alternative methods <p>Maintain sufficient quantities of temporary sediment control materials on-site throughout the duration of the project</p> | Project Sponsor | Prior to the Start of Construction | Kings County | |
| <p>Mitigation Measure LU-1: A preliminary geotechnical study and hydrological assessment shall be conducted prior to any expansion of the proposed pipeline into the Kings County Natural Resource Conservation Overlay zoning district. The study shall evaluate the potential impacts of pipeline expansion on existing waterways and identify mitigation measures to reduce the potential for surface and groundwater contamination to occur during and after construction. Expansion activities must implement all mitigation measures identified by the study and adhere to all standards identified by the Kings County Development Code for this zoning overlay district.</p> | Project Sponsor | Prior to construction of future pipeline expansion activities | Kings County | |
| <p>Mitigation Measure TRANS-1: A detectable underground warning tape will be installed above the pipeline where the pipeline crosses public ROW to notify anyone digging in the area of the deeper pipe. Signage will also be provided along the pipeline at half mile intervals to provide notice of the buried pipe.</p> | Project Sponsor | Design feature and signage to be implemented during construction | Kings County | |

| Mitigation Measure | Responsible Party for Implementation | Implementation Timing | Responsible Party for Monitoring | Verification |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|----------------------------------|--------------|
| Mitigation Measure TRANS-2: Physical barriers are included in the pipeline's design to ensure that the pipeline is not damaged, even if the notification measures described in Mitigation Measure Trans-1 are unsuccessful. At all locations where the pipeline crosses public ROW, the pipeline will be sleeved through a steel pipe for the entire expanse of the right of way. Additionally, a 6" thick concrete barrier will be installed approximately 2 feet above the pipeline. This would be done so that a backhoe, or other digging equipment, would hit something solid before hitting the pipeline. | Project Sponsor | Design feature to be implemented during construction | Kings County | |
| Mitigation Measure TRANS-3: An Operations and Maintenance Program will be developed and followed to inspect and pressure test the pipeline. Testing and inspection will occur during construction and on an annual basis during project operations. | Project Sponsor | Ongoing during construction and annually following construction | Kings County | |

3.6 Supporting Information and Sources

1. Kings County General Plan. <https://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan>
2. Kings County General Plan EIR. <https://www.countyofkings.com/home/showdocument?id=5897>
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Section 4

List of Preparers



Kings County
 Community Development Agency
 1400 W. Lacey Blvd., Bld. 6
 Hanford, CA 93230

SECTION 4

List of Preparers

Project Title: Conditional Use Permit No. 19-07 for the Hanford Biogas Cluster Project

List of Preparers

4-Creeks Inc.

- David Duda, AICP, GISP
- Molly McDonnel, Associate Planner

Persons and Agencies Consulted

The following individuals and agencies contributed to this Initial Study/Mitigated Negative Declaration:

4-Creeks Inc.

- David De Groot, PE.
- Matt Razor, PE.
- Kyle Parreira, PE

ASM Affiliates

- David S. Whitley, Principal Investigator
- Robert Azpitarte, Associate Archaeologist

BSK Associates

- On Man Lau, PE, GE.

California Historic Resources Information System

- Celeste Thomson, Coordinator

Kings County

- Chuck Kinney, Deputy Director of Planning

Live Oak and Associates

- Jeff Gurule, Senior Project Manager
- Austin Pearson, Director of Ecological Services

SCS Energy/SCS Engineers

- Todd A. Stewart, PE, PMP, Senior Project Manager

Appendix A

CalEEMod Report

Hanford Biogas Cluster Project - Kings County, Annual

Hanford Biogas Cluster Project
Kings County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|-------------------------|------|-------------------|-------------|--------------------|------------|
| User Defined Industrial | 0.00 | User Defined Unit | 9.00 | 392,040.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------|-------|------------------|-----|---------------------------|------|
| Urbanization | Rural | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 37 |
| Climate Zone | 3 | | | Operational Year | 2021 |

Utility Company Southern California Edison

| | | | | | |
|-----------------------------|--------|-----------------------------|-------|-----------------------------|-------|
| CO2 Intensity (lb/MW/hr) | 702.44 | CH4 Intensity (lb/MW/hr) | 0.029 | N2O Intensity (lb/MW/hr) | 0.006 |
|-----------------------------|--------|-----------------------------|-------|-----------------------------|-------|

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project site is approximately 9 acres

Construction Phase - Project construction is anticipated to last approximately 6 months

Off-road Equipment - Construction is anticipated to utilize (2) Tractors/Loaders/Backhoes, (2) Excavators, (2) Generators, (1) Air Compressor, (4) Plate Compactors, (2) Other Equipment, (4) Forklifts and (1.5) Welders.

Trips and VMT - We anticipate an average of 30 construction workers traveling to site each day and an average of 2-3 vendor deliveries per week

Hanford Biogas Cluster Project - Kings County, Annual

| Table Name | Column Name | Default Value | New Value |
|---------------------------|-------------------------|---------------|------------------------------|
| tblConstructionPhase | NumDays | 10.00 | 151.00 |
| tblConstructionPhase | PhaseEndDate | 10/31/2019 | 5/29/2020 |
| tblLandUse | BuildingSpaceSquareFeet | 0.00 | 392,040.00 |
| tblLandUse | LandUseSquareFeet | 0.00 | 392,040.00 |
| tblLandUse | LotAcreage | 0.00 | 9.00 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Generator Sets |
| tblOffRoadEquipment | OffRoadEquipmentType | | Air Compressors |
| tblOffRoadEquipment | OffRoadEquipmentType | | Plate Compactors |
| tblOffRoadEquipment | OffRoadEquipmentType | | Forklifts |
| tblOffRoadEquipment | OffRoadEquipmentType | | Welders |
| tblOffRoadEquipment | OffRoadEquipmentType | | Other Construction Equipment |
| tblProjectCharacteristics | Operational Year | 2018 | 2021 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 1.00 |
| tblTripsAndVMT | WorkerTripNumber | 18.00 | 30.00 |

2.0 Emissions Summary

Unmitigated Construction

Mitigated Construction

[illegible]

Hanford Biogas Cluster Project - Kings County, Annual

2.2 Overall Operational**Mitigated Operational**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.8037 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.8037 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-------------------------------------------|------------------|------------|-----------|---------------|----------|-------------------|
| 1 | Site Preparation and Project Construction | Site Preparation | 11/1/2019 | 5/29/2020 | 5 | 151 | |

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0**Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-------------------------------------------|------------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Tractors/Loaders/Backhoes | 2 | 10.00 | 97 | 0.37 |
| Architectural Coating | Excavators | 2 | 10.00 | 158 | 0.38 |
| Architectural Coating | Generator Sets | 2 | 10.00 | 84 | 0.74 |
| Architectural Coating | Air Compressors | 1 | 5.00 | 78 | 0.48 |
| Architectural Coating | Plate Compactors | 4 | 10.00 | 8 | 0.43 |
| Architectural Coating | Forklifts | 4 | 10.00 | 89 | 0.20 |
| Architectural Coating | Welders | 2 | 10.00 | 46 | 0.45 |
| Architectural Coating | Other Construction Equipment | 2 | 10.00 | 172 | 0.42 |
| Site Preparation and Project Construction | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation and Project Construction | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |

Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|-------------------------------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Site Preparation and Project Construction | 7 | 30.00 | 1.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

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3.2 Site Preparation and Project Construction - 2019**Unmitigated Construction On-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | 0.0932 | 0.9798 | 0.4744 | 8.2000e-004 | 1.3640 | 0.0000 | 1.3640 | 0.7498 | 0.0000 | 0.7498 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0932 | 0.9798 | 0.4744 | 8.2000e-004 | 1.3640 | 0.0000 | 1.3640 | 0.7498 | 0.0000 | 0.7498 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0932 | 0.9798 | 0.4744 | 8.2000e-004 | 1.3640 | 0.0514 | 1.4154 | 0.7498 | 0.0473 | 0.7971 | 0.0000 | 73.4627 | 73.4627 | 0.0232 | 0.0000 | 74.0437 |

Unmitigated Construction Off-Site

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.0000e-004 | 2.7200e-003 | 5.8000e-004 | 1.0000e-005 | 1.3000e-004 | 2.0000e-005 | 1.5000e-004 | 4.0000e-005 | 2.0000e-005 | 5.0000e-005 | 0.0000 | 0.5488 | 0.5488 | 7.0000e-005 | 0.0000 | 0.5505 |
| Worker | 4.4100e-003 | 3.7700e-003 | 0.0345 | 8.0000e-005 | 8.0600e-003 | 5.0000e-005 | 8.1100e-003 | 2.1400e-003 | 5.0000e-005 | 2.1900e-003 | 0.0000 | 6.9801 | 6.9801 | 2.8000e-004 | 0.0000 | 6.9871 |
| Total | 4.5100e-003 | 6.4900e-003 | 0.0350 | 9.0000e-005 | 8.1900e-003 | 7.0000e-005 | 8.2600e-003 | 2.1800e-003 | 7.0000e-005 | 2.2400e-003 | 0.0000 | 7.5289 | 7.5289 | 3.5000e-004 | 0.0000 | 7.5376 |

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3.2 Site Preparation and Project Construction - 2019**Mitigated Construction On-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | 0.0932 | 0.9798 | 0.4744 | 8.2000e-004 | 1.3640 | 0.0000 | 1.3640 | 0.7498 | 0.0000 | 0.7498 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0932 | 0.9798 | 0.4744 | 8.2000e-004 | 1.3640 | 0.0000 | 1.3640 | 0.7498 | 0.0000 | 0.7498 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0932 | 0.9798 | 0.4744 | 8.2000e-004 | 1.3640 | 0.0514 | 1.4154 | 0.7498 | 0.0473 | 0.7971 | 0.0000 | 73.4626 | 73.4626 | 0.0232 | 0.0000 | 74.0437 |

Mitigated Construction Off-Site

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.0000e-004 | 2.7200e-003 | 5.8000e-004 | 1.0000e-005 | 1.3000e-004 | 2.0000e-005 | 1.5000e-004 | 4.0000e-005 | 2.0000e-005 | 5.0000e-005 | 0.0000 | 0.5488 | 0.5488 | 7.0000e-005 | 0.0000 | 0.5505 |
| Worker | 4.4100e-003 | 3.7700e-003 | 0.0345 | 8.0000e-005 | 8.0600e-003 | 5.0000e-005 | 8.1100e-003 | 2.1400e-003 | 5.0000e-005 | 2.1900e-003 | 0.0000 | 6.9801 | 6.9801 | 2.8000e-004 | 0.0000 | 6.9871 |
| Total | 4.5100e-003 | 6.4900e-003 | 0.0350 | 9.0000e-005 | 8.1900e-003 | 7.0000e-005 | 8.2600e-003 | 2.1800e-003 | 7.0000e-005 | 2.2400e-003 | 0.0000 | 7.5289 | 7.5289 | 3.5000e-004 | 0.0000 | 7.5376 |

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3.2 Site Preparation and Project Construction - 2020**Unmitigated Construction On-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.3640 | 0.0000 | 1.3640 | 0.7498 | 0.0000 | 0.7498 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2201 | 2.2905 | 1.1617 | 2.0500e-003 | | 0.1187 | 0.1187 | 0.1092 | 0.1092 | 0.1092 | 0.0000 | 180.5257 | 180.5257 | 0.0584 | 0.0000 | 181.9853 |
| Total | 0.2201 | 2.2905 | 1.1617 | 2.0500e-003 | 1.3640 | 0.1187 | 1.4827 | 0.7498 | 0.1092 | 0.8589 | 0.0000 | 180.5257 | 180.5257 | 0.0584 | 0.0000 | 181.9853 |

Unmitigated Construction Off-Site

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.1000e-004 | 6.2500e-003 | 1.2700e-003 | 1.0000e-005 | 3.3000e-004 | 3.0000e-005 | 3.6000e-004 | 9.0000e-005 | 3.0000e-005 | 1.2000e-004 | 0.0000 | 1.3661 | 1.3661 | 1.6000e-004 | 0.0000 | 1.3702 |
| Worker | 0.0100 | 8.3100e-003 | 0.0765 | 1.9000e-004 | 0.0202 | 1.3000e-004 | 0.0204 | 5.3800e-003 | 1.2000e-004 | 5.5000e-003 | 0.0000 | 16.9855 | 16.9855 | 6.1000e-004 | 0.0000 | 17.0008 |
| Total | 0.0102 | 0.0146 | 0.0778 | 2.0000e-004 | 0.0206 | 1.6000e-004 | 0.0207 | 5.4700e-003 | 1.5000e-004 | 5.6200e-003 | 0.0000 | 18.3516 | 18.3516 | 7.7000e-004 | 0.0000 | 18.3710 |

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3.2 Site Preparation and Project Construction - 2020**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.3640 | 0.0000 | 1.3640 | 0.7498 | 0.0000 | 0.7498 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2201 | 2.2905 | 1.1617 | 2.0500e-003 | | 0.1187 | 0.1187 | 0.1092 | 0.1092 | 0.1092 | 0.0000 | 180.5255 | 180.5255 | 0.0584 | 0.0000 | 181.9851 |
| Total | 0.2201 | 2.2905 | 1.1617 | 2.0500e-003 | 1.3640 | 0.1187 | 1.4827 | 0.7498 | 0.1092 | 0.8589 | 0.0000 | 180.5255 | 180.5255 | 0.0584 | 0.0000 | 181.9851 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.1000e-004 | 6.2500e-003 | 1.2700e-003 | 1.0000e-005 | 3.3000e-004 | 3.0000e-005 | 3.6000e-004 | 9.0000e-005 | 3.0000e-005 | 1.2000e-004 | 0.0000 | 1.3661 | 1.3661 | 1.6000e-004 | 0.0000 | 1.3702 |
| Worker | 0.0100 | 8.3100e-003 | 0.0765 | 1.9000e-004 | 0.0202 | 1.3000e-004 | 0.0204 | 5.3800e-003 | 1.2000e-004 | 5.5000e-003 | 0.0000 | 16.9855 | 16.9855 | 6.1000e-004 | 0.0000 | 17.0008 |
| Total | 0.0102 | 0.0146 | 0.0778 | 2.0000e-004 | 0.0206 | 1.6000e-004 | 0.0207 | 5.4700e-003 | 1.5000e-004 | 5.6200e-003 | 0.0000 | 18.3516 | 18.3516 | 7.7000e-004 | 0.0000 | 18.3710 |

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|-------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| User Defined Industrial | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|-------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| User Defined Industrial | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| User Defined Industrial | 0.493375 | 0.028385 | 0.147799 | 0.120572 | 0.020115 | 0.004575 | 0.012018 | 0.162105 | 0.001742 | 0.001833 | 0.005782 | 0.000964 | 0.000735 |

[illegible]

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|-----------|--------|--------|--------|
| Land Use | kWh/yr | MT/yr | | | |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|-----------|--------|--------|--------|
| Land Use | kWh/yr | MT/yr | | | |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail

6.1 Mitigation Measures Area

Unmitigated

[illegible]

Hanford Biogas Cluster Project - Kings County, Annual

6.2 Area by SubCategory**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.2726 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.5311 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.8037 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.0 Water Detail**7.1 Mitigation Measures Water**

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|--------------------|-----------|--------|--------|--------|
| Land Use | Mgal | MT/yr | | | |
| User Defined Industrial | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Hanford Biogas Cluster Project - Kings County, Annual

7.2 Water by Land Use**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|--------------------|-----------|--------|--------|--------|
| Land Use | Mgal | MT/yr | | | |
| User Defined Industrial | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Hanford Biogas Cluster Project - Kings County, Annual

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-------------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-------------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|------------|-------------|-------------|-----------|
|----------------|--------|-----------|------------|-------------|-------------|-----------|

Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation

Appendix B

Biological Evaluation



LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

**HANFORD BIOGAS CLUSTER PROJECT, OPTION 3
BIOLOGICAL EVALUATION
KINGS COUNTY, CALIFORNIA**



Prepared by:

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Director of Ecological Services
Jeff Gurule, Senior Project Manager, Wildlife/Wetlands/Plant Biologist

Prepared for:

David Duda
4Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, CA 93292

August 28, 2019

PN 2222-03

Oakhurst: P.O. Box 2697 • 39930 Sierra Way, Suite B • Oakhurst, CA 93644 • Phone: (559) 642-4880 • Fax: (559) 642-4883
San Jose: 6840 Via Del Oro, Suite 220 • San Jose, CA 95119 • Phone: (408) 224-8300 • Fax: (408) 224-2411
Truckee: P.O. Box 8810 • Truckee, CA 96161 • Phone: (530) 214-8947

www.loainc.com

EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted an investigation of the biological resources of the Hanford Biogas Cluster project site in Kings County, California and evaluated likely impacts to such resources resulting from project development. The project site is located approximately 6 miles north of Corcoran and 7 miles south of Hanford. On January 11, 2018 and February 19, May 3, and July 12, 2019, LOA surveyed the project site for biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law.

Habitats/land uses identified within the project site comprised ruderal, fallow agricultural field, non-native grassland, and waterway. The principle drainage of the site and near vicinity is Cross Creek. The site is primarily surrounded by agriculture, the dominant land use in the region; however, east of Cross Creek, the site passes through a small portion of a 3,000-acre block of non-native grassland. In addition to Cross Creek, several irrigation canals pass through the project site. Cross Creek is a known water of the U.S. and would likely also fall under the jurisdiction of the California Department of Fish and Wildlife (CDFW). All of the site's canals lack downstream connectivity to waters of the U.S. and do not represent or replace a natural drainage or support riparian habitat; therefore, the canals are unlikely to be considered jurisdictional by the U.S. Army Corps of Engineers or CDFW. Cross Creek and all of the canals are waters of the State subject to the regulatory authority of the Regional Water Quality Control Board.

The project has the potential to result in construction-related mortality of the Tipton kangaroo rat, in the event this species inhabits the small area of non-native grassland habitat on the site. Should San Joaquin kit fox be denning on-site at the time of construction, individuals of this species could be injured or killed. The project also has the potential to result in construction-related mortality/disturbance of roosting or nesting burrowing owls, nesting Swainson's hawks, and other nesting raptors and migratory birds including the white-tailed kite, northern harrier, and loggerhead shrike. These impacts, if they occur, would violate federal and/or state laws and are considered significant under the California Environmental Quality Act (CEQA). Project avoidance of active burrows, dens, nests, and roosts identified during protocol-level surveys and/or preconstruction surveys and implementation of minimization measures consistent with the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* will reduce the magnitude of these potential impacts to a less than significant level under CEQA.

Impacts associated with project development would be less than significant, as defined by CEQA, for special status plant species; special status animals absent from or unlikely to use the project site; special status animals that could forage on the project site but would breed elsewhere; fish and wildlife movement; jurisdictional waters; and sensitive habitats. Loss of habitat for special status animal species would also be considered less than significant under CEQA. The project is not in conflict with local policies or habitat conservation plans.

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1.0 INTRODUCTION

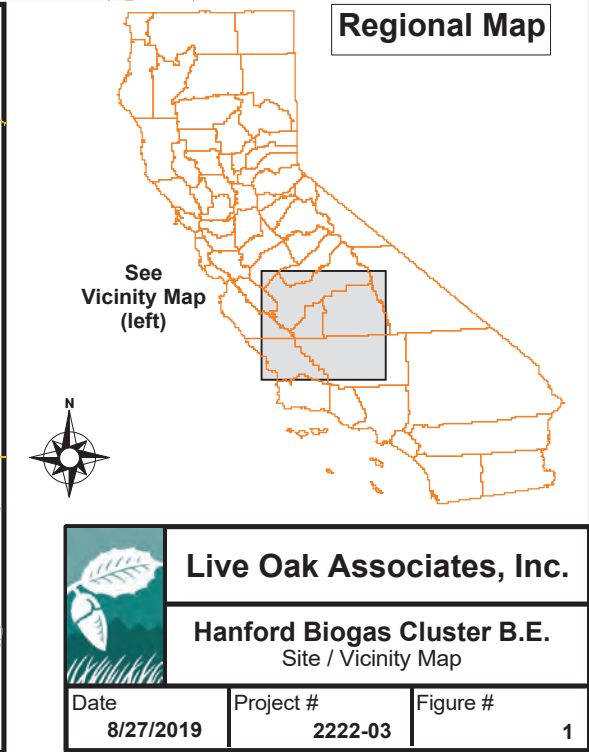
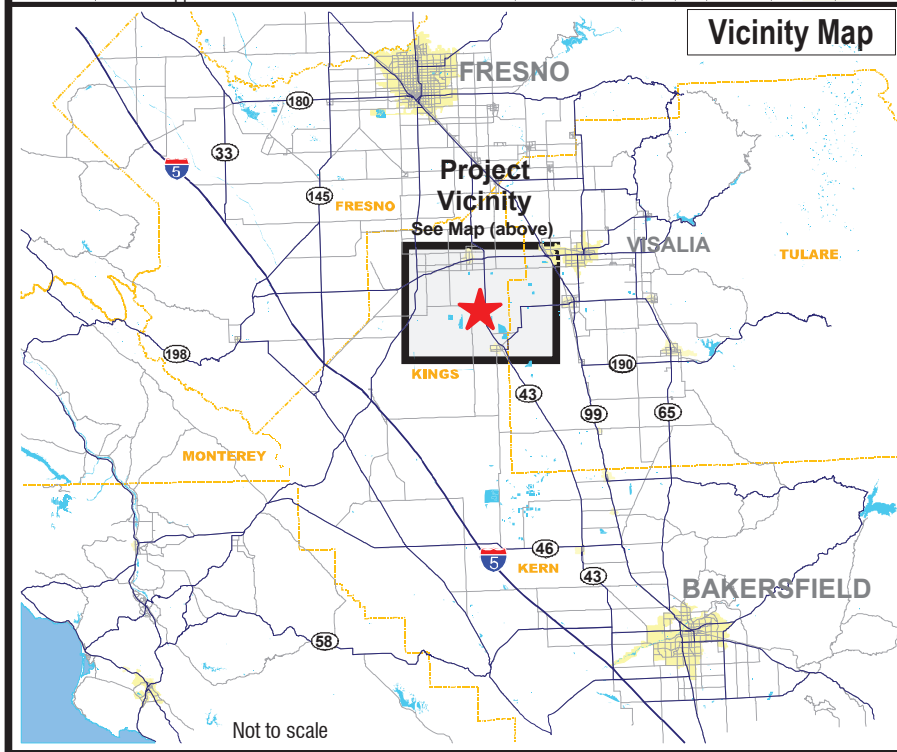
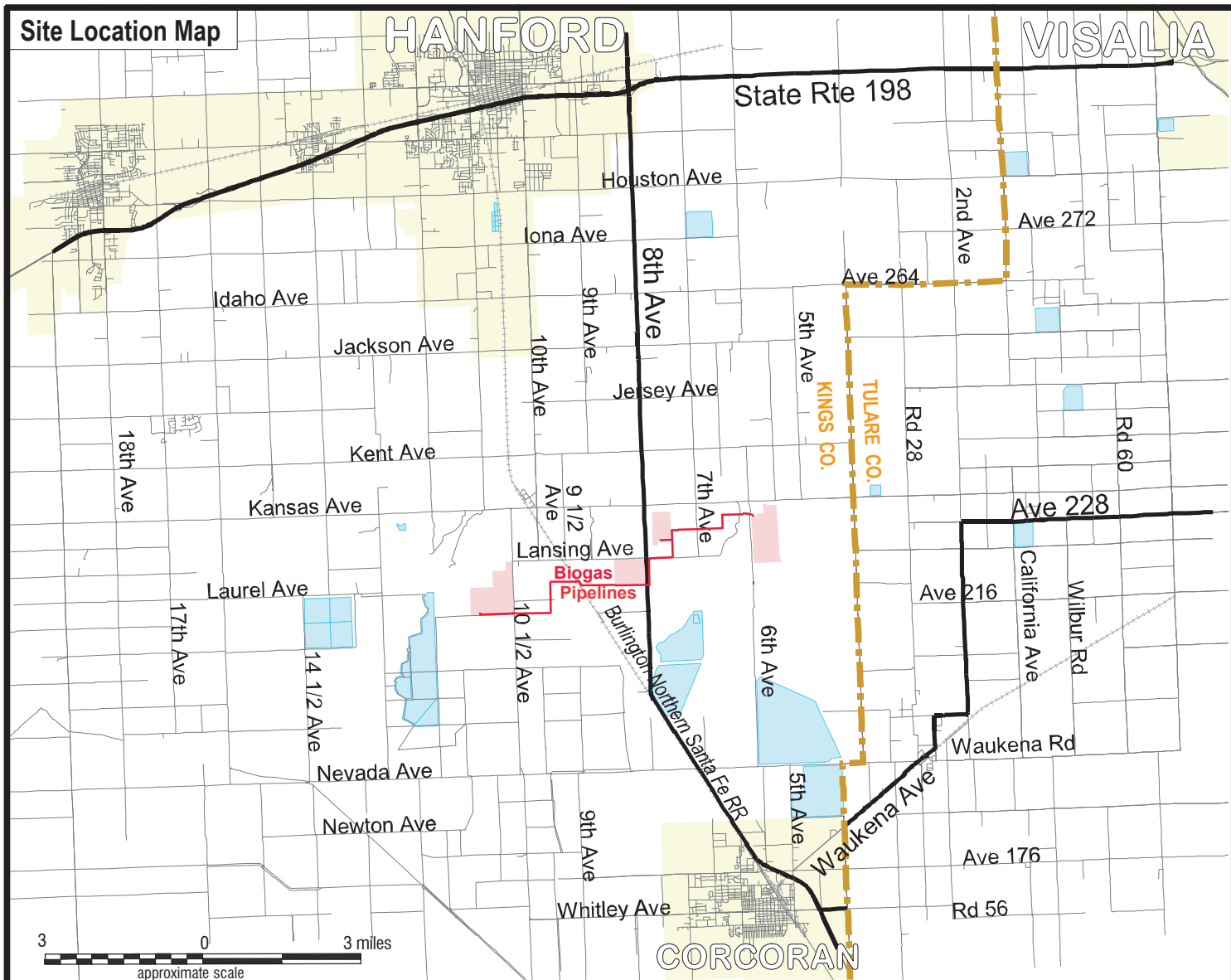
The technical report that follows describes the biotic resources of lands proposed for development (hereafter referred to as “project site”) of the Hanford Biogas Cluster Project, Option 3. The project site is located in the northeast portion of Kings County, approximately 6 miles north of Corcoran and 7 miles south of Hanford (Figure 1). The site can be found on the *Waukena* and *Guernsey* U.S. Geological Survey (USGS) 7.5-minute quadrangles within Sections 13 and 14 of Township 20 South, Range 21 East, and Sections 9-11 and 16-18 of Township 20 South, Range 22 East; Mt. Diablo Base and Meridian (Figure 2).

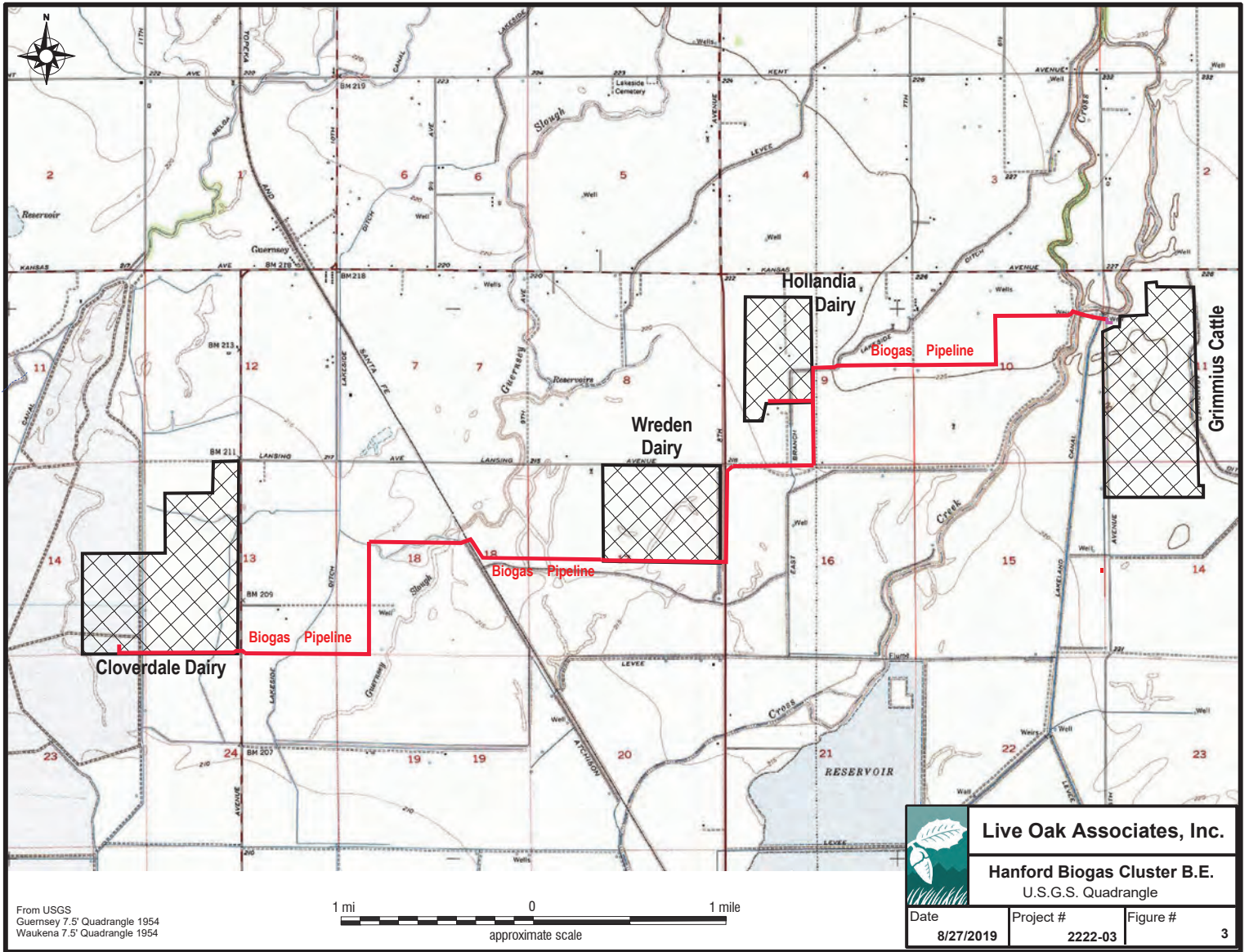
1.1 PROJECT DESCRIPTION

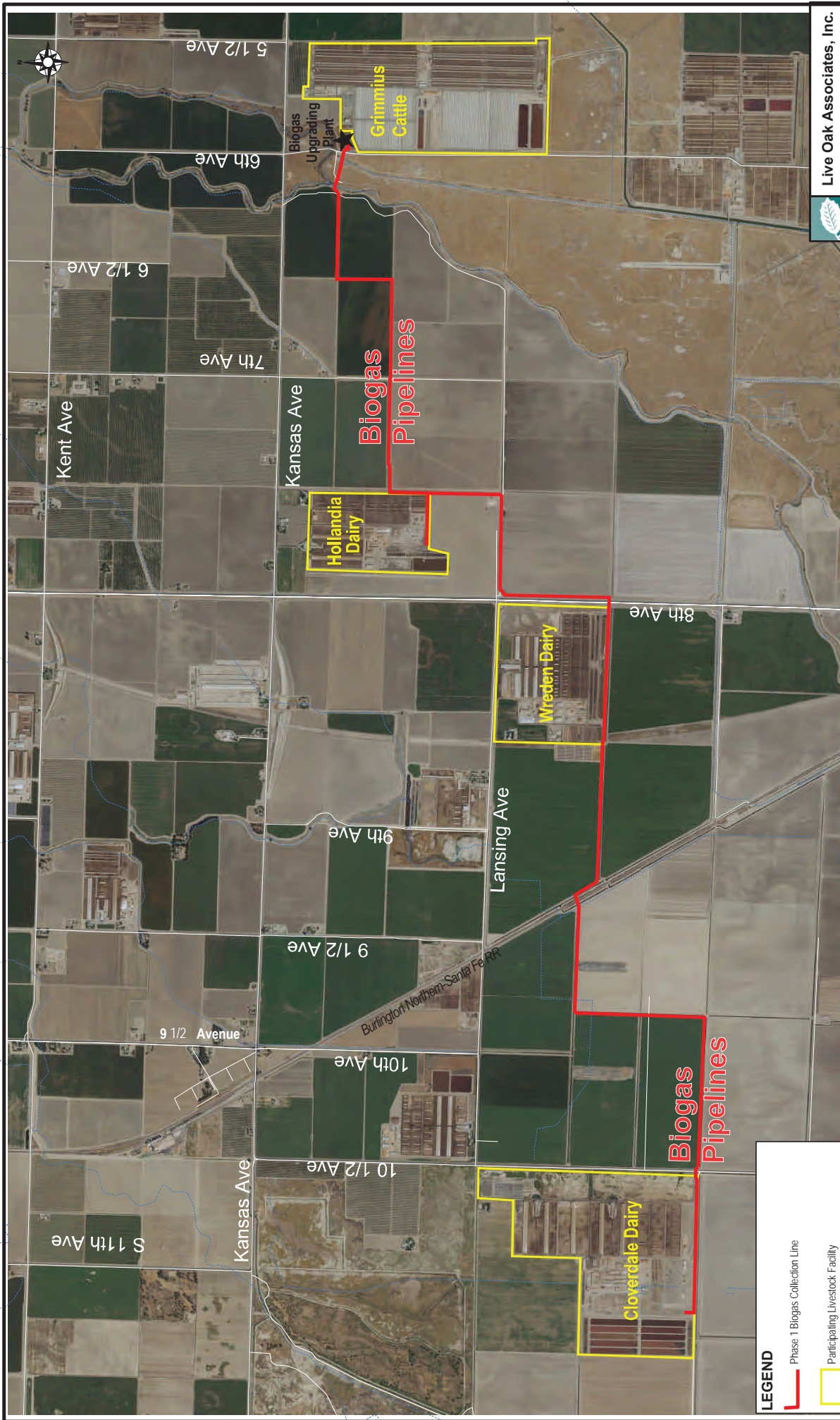
The purpose of this project is to reduce methane emissions from livestock waste while generating renewable energy through a biogas recovery system. Several options for project design have been considered. The currently proposed option, Option 3, involves the construction, installation, and operation of a 7.3-mile pipeline, which will connect existing anaerobic digesters at Cloverdale Dairy, Wreden Ranch Dairy, and Hollandia Dairy, to a proposed biogas upgrading facility (see Figure 3 for project layout). Additional digesters from other bovine facilities will be connected to the proposed pipeline and biogas upgrading facility in the future. The additional projects will be subject to County site plan review, which are ministerial projects that are exempt from environmental review under CEQA.

The pipeline will be located primarily within agricultural properties within or along existing roads. The pipeline will originate at the Cloverdale Dairy, run east to the Wreden Ranch Dairy, then northeast to the Hollandia Dairy where a short westward pipeline spur will be placed, and then run east to terminate at the proposed upgrade facility.

The pipeline will be 12 inches in diameter at its widest point, and will be installed via backhoe trenching at least 72 inches below the existing ground surface. The anticipated disturbance corridor for backhoe trenching is approximately 10 feet wide per linear foot of pipe. The pipeline alignment will maintain a minimum 10-foot offset from all irrigation canals, save those that must be crossed.







Live Oak Associates, Inc.

Hanford Biogas Cluster B.E.
Biogas Participants & Pipeline Location

| | | | | | |
|------|-----------|-----------|---------|----------|---|
| Date | 8/27/2019 | Project # | 2222-03 | Figure # | 3 |
|------|-----------|-----------|---------|----------|---|

LEGEND

Phase 1 Biogas Collection Line

Participating Livestock Facility

★ Hanford Cluster Upgrading Facility

Sources:
Aerial photograph courtesy of USDA FSA Aerial Photography Field Office 1/29/2019



Where the pipeline alignment crosses roads, canals, and Cross Creek, the pipes will be installed by method of jack-and-bore. In this method, pits are dug on each side of the feature to be crossed and a ram is placed in one pit to punch a steel casing pipe underneath. Once the steel casing is received on the other side, the operational pipe is slid into the casing and connected on each side. A 2-foot-thick concrete cap will be placed on top of any piping located within unpaved portions of the public right-of-way. Once the pipe and cap are installed the trench will be backfilled with compacted fill material.

Once installed, the pipeline will connect the anaerobic digester facilities at Cloverdale Dairy, Hollandia Dairy, and Wreden Ranch Dairy to the proposed biogas upgrading facility. The upgrade facility will include an upgrading plant, connection infrastructure to existing SoCalGas transmission line, and perimeter fence. The completed facility will occupy an area of approximately 1.7 acres.

Trees and shrubs will be avoided during project construction.

1.2 REPORT OBJECTIVES

Construction of biogas facilities may damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by county policies and ordinances. This report addresses issues related to: 1) sensitive biotic resources occurring, or potentially occurring, on the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur on-site based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development;

- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA or any state or federal laws; and
- Identify avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

1.3 STUDY METHODOLOGY

Reconnaissance-level field surveys of portions of the project site were conducted on January 11, 2018 by Live Oak Associates, Inc. (LOA) biologist Jeff Gurule, on February 19, 2019 by Mr. Gurule and LOA biologist Anna Godinho, and on May 3, 2019 by Mr. Gurule. The entirety of the Option 3 project site was surveyed by Mr. Gurule on July 12, 2019. The surveys consisted of driving and walking through the project site while identifying the principal land uses and biotic habitats of the site, identifying plant and animal species encountered, and assessing the suitability of the site's habitats for special-status species.

LOA conducted an analysis of potential project impacts based on the known and potential biotic resources of the project site. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2019), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2019), and (3) manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

Focused surveys for sensitive biological resources were not conducted for this study. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with development of the project site and to assess the need for more detailed surveys.

2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located in the southern San Joaquin Valley between the City of Hanford and the City of Corcoran. The valley is bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coastal ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Like most of California, the southern San Joaquin Valley (and the project site) experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation in the vicinity of the project is about 9 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The principal drainage of the project vicinity is Cross Creek, which intersects the proposed pipeline alignment south of Kansas Avenue and west of 6th Avenue. Cross Creek historically flowed into Tulare Lake, which encompassed many square miles, including a portion of the project site. These two water bodies once contained large areas of riparian, wetland, and aquatic ecosystems that supported large populations of diverse native plants and animals. Presently, Tulare Lake is extinct and the area largely utilized for agriculture. Cross Creek supports only a fraction of the riparian habitat it once supported, and its aquatic habitat has been greatly degraded from agricultural runoff and irregular flows.

The project site is situated within a matrix of agricultural lands dominated by dairy operations.

2.2 PROJECT SITE

The project site consists of roads, grassland, agricultural field, dairy facilities, irrigation canals, a portion of Cross Creek, and disturbed areas bordering these uses. The topography of the site is

relatively level, ranging from 211 feet National Geodetic Vertical Datum (NGVD) at the eastern end of the pipeline alignment to 189 feet NGVD at the western end of the alignment.

Fifteen soil mapping units representing twelve soil series were identified on the project site and are summarized in Table 1 on the following page. As noted in the table, six of the mapping units are considered hydric, meaning they may be saturated, flooded, or ponded long enough during the growing season to support hydrophytic, or water-loving, vegetation. However, due to long-term intensive land uses across most of the project site, the site's native soil characteristics have largely been eliminated, save for the grassland areas of the site. Trees and shrubs are absent from the project site itself; however, some non-native ornamental trees associated with rural residences occur immediately adjacent to the site.

TABLE 1. SOILS OF THE PROJECT SITE

| Soil | Mapping Unit | Parent Material | Surface Permeability | Hydric |
|---------------------------------------------------------------|--------------|----------------------------------------------------|------------------------------|--------|
| Armona loam, partially drained | 101 | Alluvium derived from igneous and sedimentary rock | Poorly drained | Yes |
| Cajon sandy loam | 104 | Alluvium derived from igneous and sedimentary rock | Somewhat excessively drained | No |
| Garces loam | 113 | Alluvium derived from granite | Well drained | No |
| Goldberg loam, drained | 117 | Alluvium derived from igneous and sedimentary rock | Somewhat poorly drained | Yes |
| Grangeville fine sandy loam, saline-alkali, partially drained | 121 | Alluvium derived from granite | Somewhat poorly drained | Yes |
| Kimberlina fine sandy loam, sandy substratum | 131 | Alluvium derived from igneous and sedimentary rock | Well drained | No |
| Kimberlina saline alkali-Garces complex | 132 | Alluvium derived from igneous and sedimentary rock | Well drained | No |
| Lakeside loam, partially drained | 134 | Alluvium derived from igneous and sedimentary rock | Somewhat poorly drained | Yes |
| Lakeside clay loam, drained | 135 | Alluvium derived from igneous and sedimentary rock | Somewhat poorly drained | Yes |

TABLE 1. Cont'd

| Soil | Mapping Unit | Parent Material | Surface Permeability | Hydric |
|-----------------------------------------------------------|---------------------|----------------------------------------------------|------------------------------|---------------|
| Nord fine sandy loam, saline-alkali | 148 | Alluvium derived from igneous rock | Well drained | No |
| Nord complex | 149 | Alluvium derived from igneous rock | Well drained | No |
| Wasco sandy loam, 0 to 5 percent slopes | 174 | Alluvium derived from sandstone | Well drained | No |
| Westcamp loam, partially drained | 175 | Alluvium derived from igneous and sedimentary rock | Somewhat poorly drained | Yes |
| Westhaven clay loam, saline-alkali, 0 to 2 percent slopes | 178 | Alluvium derived from igneous and sedimentary rock | Moderately well drained | No |
| Whitewolf coarse sandy loam | 179 | Alluvium derived from igneous and sedimentary rock | Somewhat excessively drained | No |

2.3 BIOTIC HABITATS/LAND USES

The project site encompasses four land use types: ruderal, non-native grassland, fallow agricultural field, and waterway. An aerial photo with the project layout is presented in Figure 3 that broadly illustrates the land uses on the project site and vicinity. These land uses and their constituent plant and animal species are described in more detail below. A list of the vascular plant species observed within the project site and the terrestrial vertebrates using, or potentially using, the site's habitats are provided in Appendices A and B, respectively. Selected photographs of the project site are presented in Appendix C.

2.3.1 Ruderal

Ruderal (disturbed) areas consist of roads, road margins, and other areas of the project site characterized by paved or compacted dirt surfaces and high levels of disturbance. At the time of the field surveys, ruderal areas of the project site were barren or sparsely vegetated with common weed species such as foxtail barley (*Hordeum murinum* ssp. *leporinum*), common purslane (*Portulaca oleracea*), flax-leaved horseweed (*Erigeron bonariensis*), Bermuda grass (*Cynodon dactylon*), alkali mallow (*Malvella leprosa*), and spotted spurge (*Euphorbia maculata*), among others.

Although the wildlife habitat value of the project site's ruderal lands is relatively low, these lands could be utilized by limited numbers of some wildlife species. Amphibians such as the Sierran tree frog (*Pseudacris sierra*) and western toad (*Bufo boreas*) may breed in nearby irrigation ditches and canals and subsequently disperse through the site's ruderal areas, potentially taking refuge in small mammal burrows or other refugia located in this land use type. Reptiles that could occur in the site's ruderal areas include the side-blotched lizard (*Uta stansburiana*), Pacific gopher snake (*Pituophis catenifer catenifer*), and common kingsnake (*Lampropeltis getulus*).

Common avian resident species likely to occasionally forage in these areas of the project site include mourning doves (*Zenaida macroura*), house sparrows (*Passer domesticus*), and American crows (*Corvus brachyrhynchos*). Winter migrants that would be common on ruderal lands of the project site include the savannah sparrow (*Passerella sandwichensis*), American pipit (*Anthus rubescens*), and white-crowned sparrow (*Zonotrichia leucophrys*), while common summer migrants would include the western kingbird (*Tyrannus verticalis*). The killdeer (*Charadrius vociferous*) may also occur here and often nests on gravel or bare ground.

Small mammals that would be expected to occur on ruderal lands of the project site include California ground squirrels (*Otospermophilus beecheyi*), Botta's pocket gophers (*Thomomys bottae*), deer mice (*Peromyscus maniculatus*), California voles (*Microtus californicus*), and house mice (*Mus musculus*). In fact, a number of California ground squirrel burrows were observed in the site's ruderal areas at the time of the field survey. Mammalian predators with the

potential to occur on ruderal lands of the project site include disturbance-tolerant species such as the raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and coyote (*Canis latrans*).

2.3.2 Non-Native Grassland

The proposed pipeline alignment traverses approximately 400 feet of previously disturbed non-native grassland habitat between Cross Creek and the Lakeland Canal, west of Avenue 6. Past disturbance to this grassland appears to have consisted of scraping, mowing, and or discing, as evidenced from historic aerial photography. At the time of the July 2019 survey, this area was dominated by non-native grasses and forbs including foxtail barley, ripgut (*Bromus diandrus*), and red-stemmed filaree (*Erodium cicutarium*). Native forbs such as common tarweed (*Centromadia pungens*), and fiddleneck (*Amsinckia sp.*) were also found in the grassland habitat.

Reptiles and amphibians occurring in the site's grassland habitat would include those discussed for ruderal areas. The site's grasslands provide high-quality foraging habitat for a variety of birds, including residents such as western meadowlarks (*Sturnella neglecta*) and mixed flocks of Brewer's blackbirds (*Euphagus cyanocephalus*), brown-headed cowbirds (*Molothrus ater*), and European starlings (*Sturnus vulgaris*); summer migrants such as western kingbirds; and winter migrants such as savannah sparrows and American pipits. Raptors likely to forage in the site's grassland habitat include the red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), burrowing owl (*Athene cunicularia*), and during the breeding season, the Swainson's hawk (*Buteo swainsoni*). Northern harriers also have the potential to use the site's grasslands for nesting, and burrowing owls could nest or roost in this habitat type where small mammal burrows are present. The site's grassland habitat could also be used for nesting by the western meadowlark, horned lark (*Eremophila alpestris*), and mourning dove.

Small mammals occurring in the site's grassland habitat would be those discussed for ruderal lands, with the likely addition of the western harvest mouse (*Reithrodontomys megalotis*) and Audubon's cottontail (*Sylvilagus audubonii*). Various species of bat could forage for flying insects over the grasslands. Mammalian predators occurring in the site's grassland habitat would include the striped skunk (*Mephitis mephitis*), coyote, and red fox.

2.3.3 Fallow Agricultural Field

The proposed biogas upgrading facility is situated in an area that at the time of the July 2019 survey could best be characterized as a fallow agricultural field. Historic aerial photos reveal that this area has experienced regular agricultural related disturbance since at least 1994. At the time of the survey, a large barrow pit was present at the western end of the field and weedy herbaceous vegetation covered the entire area. This field contained common weeds such as peregrine saltbush (*Atriplex suberecta*), prickly lettuce (*Lactuca serriola*), pigweed amaranth (*Amaranthus albus*), cheeseweed mallow (*Malva parviflora*), London rocket (*Sisymbrium irio*), puncturevine (*Tribulus terrestris*), and foxtail barley, among others.

Intensive past agricultural practices within this area of the site has reduced the value of this habitat for wildlife; however, some wildlife species undoubtedly occur in the fields. Reptile and amphibian use of the fields would likely to be similar to that described for ruderal lands. Birds expected to forage within the site's fallow agricultural field include the Brewer's blackbird, European starling, mourning dove, and Eurasian collared dove (*Streptopelia decaocto*). The field may be used for nesting from time to time by mourning doves and western meadowlarks. All of the raptors discussed for non-native grassland habitat would be expected to forage in the site's fallow agricultural field from time to time, and the northern harrier could potential nest in the field.

Small mammals such as deer mice and California voles would occur in the site's fallow agricultural field in fluctuating numbers depending on the season and maintenance practices. Botta's pocket gophers and California ground squirrels could burrow within the field. Various species of bat may also forage over the field for flying insects. Mammalian predators occurring in the site's fallow agricultural field from time to time would include disturbance-tolerant species such as raccoons, striped skunks (*Mephitis mephitis*), coyotes, and red foxes.

2.3.4 Waterway

The pipeline alignment intersects several irrigation canals and Cross Creek. All the canals are highly maintained earthen channels. Most of the canals were approximately 20 to 40 feet in width and supported scant vegetation, consisting of common weeds such as sprangletop (*Leptochloa fusca*), annual bluegrass (*Poa annua*), and flax-leaved horseweed. The Lakeland Canal is a large canal approximately 75 feet in width that carries water diverted from Cross Creek. The portion of this canal within the project alignment contained a greater diversity of plant species than the other canals, which consisted of tree-tobacco (*Nicotiana glauca*), common gumplant (*Grindelia camporum*), common sunflower (*Helianthus annua*), stinging nettle (*Urtica dioica*), and rough cocklebur (*Xanthium strumarium*), among others. Cross Creek within the project site is approximately 162 feet in width at top-of-bank. It is characterized by a sandy bottom mostly barren of vegetation and banks that, at the time of the surveys, were densely vegetated with common grasses and forbs such as mugwort (*Artemisia douglasiana*), black mustard (*Brassica nigra*), Canada horseweed (*Erigeron canadensis*), yellow monkey flower (*Erythranthe guttata*), common sunflower, and rough cocklebur, among others. Riparian trees and shrubs are absent from Cross Creek at the pipeline crossing location, save one small common buttonbush (*Cephalanthus occidentalis*).

Due to intensive maintenance practices and lack of cover, on-site canals would be of limited value to native wildlife. Cross Creek and, to a lesser extent, Lakeland Canal may be of somewhat higher value because these waterways do not appear to be as frequently maintained. However, the lack of riparian habitat would limit the number of species expected to occur here. Sierran tree frogs and western toads may breed in onsite waterways, and the non-native American bullfrog (*Lithobates catesbeianus*) and mosquitofish (*Gambusia affinis*) may occur in waterways with prolonged inundation. These and other prey species may attract wading birds such as the great blue heron (*Ardea herodias*) and great egret (*Ardea alba*). Shorebirds such as the greater yellowlegs (*Tringa melanoleuca*), least sandpiper (*Calidris minutilla*), and killdeer may also occur in or adjacent to these waterways from time to time. Black phoebes (*Sayornis nigricans*) and cliff swallows (*Petrochelidon pyrrhonota*) may extract mud from the banks of onsite

waterways for nest-building, and phoebes may also glean insects from areas over the water surface.

The banks of onsite waterways provide habitat for burrowing rodents such as the California ground squirrel. At the time of the field surveys, California ground squirrel burrows were prevalent along several of the on-site canals. Where California ground squirrel burrows are present, the banks of these waterways may be used for nesting and roosting by burrowing owls. In fact, several canals along the pipeline alignment were found to support burrowing owls. Coyotes may utilize the canal and creek banks for denning, as evidenced by a few very large burrows dug into the inner banks of one of the canals. Raccoons may utilize the canals and creek for foraging.

2.4 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as “threatened” or “endangered” under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as “special status species.”

A number of special status plants and animals occur in the project vicinity (Figures 4 and 5). These species, and their potential to occur on the site, are listed in Table 2 in the following pages. Sources of information for this table included *California’s Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2019), *The Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998), eBird.org, *The Jepson*

Manual: Vascular Plants of California, second edition (Baldwin et al 2012), the on-line version of *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2019), and Calflora.org.

A search of published accounts for all of the relevant special status plant and animal species was conducted for the twelve USGS 7.5-minute quadrangles containing and immediately surrounding the project site (*Guernsey, Waukena, Lemoore, Hanford, Remnoy, Goshen, Paige, Taylor Weir, Corcoran, El Rico Ranch, Stratford SE, and Stratford*) using the California Natural Diversity Data Base (CNDDB) Rarefind 5 program (CDFW 2019). It is important to note that the CNDDB is a volunteer database; therefore, it may not contain all known literature records.



TULARE CO.
KINGS CO.

HANFORD

LEGEND

- Earlimart orache
- Tipton kangaroo rat
- mud nama
- recurred larkspur
- subtle orache
- tricolored blackbird
- western pond turtle

(Polygon extents reflects location uncertainty)

Five Kilometer (3.1 mile) radius

4th Ave

5th Ave

7th Ave

8th Ave

10th Ave

S 11th Ave

12th Ave

14th Ave

Rd 28

Bardsley Ave

Grimmies Cattle

Hollandia Dairy

Lansing Ave

Biogas

Cloverdale Dairy

Burlington Northern Santa Fe RR

10 1/2 Ave

13th Ave

Highland Cnl

East Branch Lakeside Cnl

Lakeland Cnl

West Branch Lakeland Cnl

Cross Cnk

Kimble Ditch

Melga Cnl

Manteca Ave

Nevada Ave

Earlimart orache

subtle orache

recurred larkspur

mud nama

Tipton

kangaroo rat

western pond turtle

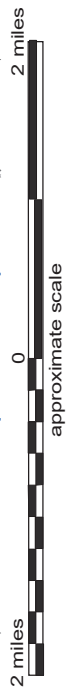
tricolored blackbird

Tipton kangaroo rat

Live Oak Associates, Inc.

Hanford Biogas Cluster B.E.
Special-status Species

Date **8/27/2019** Project # **2222-03** Figure # **4**



Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Live Oak Assoc., Inc.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE HANFORD BIOGAS CLUSTER PROJECT

PLANTS (adapted from CDFW 2019 and CNPS 2019)

CNPS-Listed Plants

| Species | Status | Habitat | Occurrence on the Project Site |
|----------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>) | CNPS 1B.2 | Occurs in cismontane woodland and valley and foothill grasslands; saline or alkaline soils; blooms April-October; elevations up to 1,850 ft. | Absent. The site consists primarily of ruderal habitats unsuitable for this species. Grassland habitat on the site is potentially suitable; however, LOA's July survey of onsite grasslands during this species' blooming period in which full visual coverage of this area was attained found this species absent. |
| Earlimart Orache (<i>Atriplex cordulata</i> var. <i>erecticaulis</i>) | CNPS 1B.2 | Occurs in valley and foothill grassland between 130 and 330 ft. in elevation; blooms April-October. | Absent. The site consists primarily of ruderal habitats unsuitable for this species. Grassland habitat on the site is potentially suitable; however, LOA's July survey of onsite grasslands during this species' blooming period in which full visual coverage of this area was attained found this species absent. |
| Lesser Saltscall (<i>Atriplex minuscula</i>) | CNPS 1B.1 | Occurs widely scattered locations of California's Central Valley with sandy alkaline soils in chenopod scrub, valley grasslands, and vernal pools; blooms May-October; elevation 50-660 ft. | Absent. The site consists primarily of ruderal habitats unsuitable for this species. Grassland habitat on the site is potentially suitable; however, LOA's July survey of onsite grasslands during this species' blooming period in which full visual coverage of this area was attained found this species absent. |
| Subtle Orache (<i>Atriplex subtilis</i>) | CNPS 1B.2 | Occurs in valley and foothill grassland; blooms June-August; elevation 130-330 ft. | Absent. The site consists primarily of ruderal habitats unsuitable for this species. Grassland habitat on the site is potentially suitable; however, LOA's July survey of onsite grasslands during this species' blooming period in which full visual coverage of this area was attained found this species absent. |
| Recurved Larkspur (<i>Delphinium recurvatum</i>) | CNPS 1B.2 | Occurs on alkaline soils in chenopod scrub, cismontane woodland, and grasslands; blooms March-June; elevations below 2,500 ft. | Unlikely. Full visual coverage surveys of the site's grassland habitat, although conducted after the recurved larkspur's blooming period, failed to detect remains of this plant in the form of dried seed pods that are relatively persistent and conspicuous on <i>Delphinium</i> species. Since the grassland area of the site did not appear to have experienced livestock grazing, plant remains would have been even more likely to have been observed had this species occurred on the project site. The closest documented occurrence of this species is a 1914 record from approximately 4 miles west of onsite grassland habitat. The next nearest occurrence is approximately 18.5 miles to the southeast. |

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE HANFORD BIOGAS CLUSTER PROJECT

PLANTS (adapted from CDFW 2019 and CNPS 2019)

CNPS-Listed Plants

| Species | Status | Habitat | Occurrence on the Project Site |
|-----------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mud Nama (<i>Nama stenocarpa</i>) | CNPS 2B.2 | Occurs in intermittently wet areas such as lake shores and river banks. Occurs sparingly in the Central Valley and more frequently in Southern California from sea level to 1,640 feet. Blooms January-July. | Absent. The site does not contain suitable wetland habitat for this species. The only feature within which this species could theoretically occur, Cross Creek, is characterized by deep sand that would not support the mud nama. |
| California Alkali Grass (<i>Puccinellia simplex</i>) | CNPS 1B.2 | Occurs in meadows, seeps, and vernal mesic areas of alkali sinks and flats within grassland and chenopod scrub habitats of the Central Valley, San Francisco Bay Area and western Mojave Desert; elevations below 3,000 feet. Blooms March-May. | Unlikely. The site's habitats are only marginally suitable for the California alkali grass, and no individuals or populations of this species were found during full visual coverage surveys. |

ANIMALS (adapted from CDFW 2019)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act, or as California Fully Protected

| | | | |
|--------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>) | FT | Occurs in vernal pools, clear to tea-colored water in grass or mud-bottomed swales, and basalt depression pools. | Absent. Suitable vernal pool habitat for this species is absent from the project site. |
| Vernal Pool Tadpole Shrimp (<i>Lepidurus packardii</i>) | FE | Primarily found in vernal pools, but may use other seasonal wetlands in mesic valley and foothill grasslands. | Absent. Suitable vernal pool habitat for this species is absent from the project site. |
| Blunt-Nosed Leopard Lizard (BNLL) (<i>Gambelia sila</i>) | FE, CE, CFP | Occurs in sparsely vegetated grasslands, desert scrub, alkali flats, and washes of the San Joaquin Valley and adjacent valleys and foothills north to southern Merced County. Is generally absent from areas of steep slope, areas of dense vegetation, and areas subject to seasonal flooding. . | Unlikely. The site's grassland habitat has experienced past ground disturbance activities and is characterized by dense vegetative cover unsuitable for the BNLL. All other portions of the project site comprise heavily modified habitats that would not support this species. The closest known BNLL occurrences are approximately 4 miles west and 6.5 miles southeast of the site, recorded in 1990 and 1974, respectively. |
| Western Snowy Plover (<i>Charadrius alexandrinus nivosus</i>) | FT, CSC | In the San Joaquin Valley, breeds and forages in association with alkali habitats including evaporation ponds and alkali lakes and flats. Has also been documented wintering at evaporation ponds in the San Joaquin Valley. | Unlikely. The project site does not contain suitable habitat for the western snowy plover. The closest known occurrence of this species was documented approximately 9 miles west of the site in 1987. |

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE HANFORD BIOGAS CLUSTER PROJECT

ANIMALS – cont’d.

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act, or as California Fully Protected

| Species | Status | Habitat | Occurrence on the Project Site |
|-----------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Swainson’s Hawk (<i>Buteo swainsoni</i>) | CT | This breeding-season migrant to California nests in mature trees in riparian areas and oak savannah, and occasionally in lone trees at the margins of agricultural fields. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations. | Likely. Swainson’s hawks are known to occur in the site vicinity. Swainson’s hawks could forage in the site’s agricultural field and grassland habitat. Nesting habitat is absent from the site itself, but occurs in tree adjacent to the site. Swainson’s hawks are known to nest in the project vicinity; the CNDDB lists three nesting occurrences within 3 miles of the site, including one as recently as 2016. |
| White-Tailed Kite (<i>Elanus leucurus</i>) | CFP | Occurs in savanna, open woodlands, marshes, desert grassland, and cultivated fields. Prefer lightly grazed or ungrazed fields for foraging. | Possible. White-tailed kites could forage in the site’s agricultural field and grassland habitat. Nesting habitat is absent from the site itself, but occurs in trees adjacent to the site. |
| Tricolored Blackbird (<i>Agelaius tricolor</i>) | CCE | Nests colonially near fresh water in dense cattails or tules, or in thickets of willows or shrubs. Forages in grassland and cropland areas. | Possible. Tricolored blackbirds could potentially forage in the site’s agricultural field and grasslands. Nesting habitat is absent from the project site. |
| Tipton Kangaroo Rat (<i>Dipodomys nitratoideus nitratoideus</i>) | FE, CE | Occupies underground burrows in valley saltbush scrub and valley sink scrub habitats in the southern San Joaquin Valley. | Possible. The Tipton kangaroo rat has the potential to occur in the site’s non-native grassland habitat. Two populations of this species were documented in the vicinity in 1985; the mapped population boundaries are between 1 and 3 miles northwest of the site, and between 4 and 8 miles west of the onsite grassland. |
| Nelson’s Antelope Squirrel (<i>Ammospermophilus nelsoni</i>) | CT | Found on the west side of the San Joaquin Valley and adjacent foothills in dry, sparsely vegetated habitats including alkali scrub and semiarid grasslands. Occupies landscapes characterized by broken terrain with small gullies and washes, and widely scattered shrubs. | Absent. The project site is outside of this species’ known distribution. Moreover, the site does not contain suitable habitat for the Nelson’s antelope squirrel; the grasslands are too densely vegetated, and the remainder of the site too disturbed, to support this species. The closest known occurrence was recorded near Kettleman City, some 10 miles southwest of the site, in 1951. |
| San Joaquin Kit Fox (SJKF) (<i>Vulpes macrotis mutica</i>) | FE, CT | Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (5 to 8 inches in diameter) ground squirrel burrows as denning habitat. | Possible. The site’s grasslands and fallow agricultural field represent suitable denning and foraging habitat for the SJKF. Although somewhat less likely, kit fox could also den on the banks of the canals or Cross Creek. The CNDDB lists 21 occurrences of the SJKF within 10 miles of the site; however, all but two are from 30+ years ago. |

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE HANFORD BIOGAS CLUSTER PROJECT

ANIMALS – cont’d.

State Species of Special Concern

| Species | Status | Habitat | Occurrence on the Project Site |
|----------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Western Spadefoot (<i>Spea hammondi</i>) | CSC | Mainly occurs in grasslands of San Joaquin Valley. Vernal pools or other temporary wetlands are required for breeding. Aestivates in underground refugia such as rodent burrows. A study conducted by Semlitsch and Bodie (2003) suggests that spadefoot aestivation occurs within 1,200 feet of breeding habitat, reflecting general patterns for frogs and toads. | Unlikely. Suitable breeding habitat for this species does not occur on, or within, 1,200 feet of the project site. The spadefoot is not known from the vicinity; the closest documented occurrence is approximately 9 miles south of the site, and was recorded in 1973. |
| Western Pond Turtle (<i>Actinemys marmorata</i>) | CSC | Occurs in open slow-moving water or ponds with rocks and logs for basking. Nesting occurs in open areas, on a variety of soil types, and up to ¼ mile away from water. This species is almost extinct in the southern San Joaquin Valley. | Unlikely. This species is not expected to occur in the highly maintained irrigation canals of the project site, nor in the intermittently inundated Cross Creek. The closest known occurrence is an undated specimen collected by CDFW approximately 1.5 miles north of the site. |
| Mountain Plover (<i>Charadrius montanus</i>) | CSC | Winter visitor to California. Forages in short grasslands, plowed fields, and sandy deserts. Breeds outside California. | Possible. This species may forage in the site’s agricultural field and grasslands during the winter. |
| Northern Harrier (<i>Circus cyaneus</i>) | CSC | Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands. Nests on ground, generally in wet areas, although grassland, pasture, and cultivated fields may be used. | Possible. Northern harriers could forage in the project site’s agricultural field and non-native grassland habitat, and could nest in the vegetated embankments of Cross Creek or the fallow agricultural field. |
| Lesser Sandhill Crane (<i>Grus canadensis canadensis</i>) | CSC | Winters in the Central Valley, where it frequents grasslands, moist croplands with rice or corn stubble, and emergent wetlands. Breeds in the Arctic. | Unlikely. Lesser sandhill cranes were heard in the distance south of the project site during the 2018 field survey. This species winters on the nearby Pixley National Wildlife Refuge where it forages on refuge lands and agricultural fields in the vicinity. Lesser sandhill cranes do not breed in California. Habitats/land uses of the site are not expected to be utilized by this species. |
| Burrowing Owl (<i>Athene cunicularia</i>) | CSC | Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows. | Present. A number of burrowing owls were observed along canals immediately adjacent to the pipeline alignment. These individuals appeared to be occupying burrows in the canal banks, and likely forage within ruderal lands on the project site. Though not observed, burrowing owls also have the potential to roost, nest, and forage within the onsite agricultural field and grassland habitat. |

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE HANFORD BIOGAS CLUSTER PROJECT

ANIMALS – cont’d.

State Species of Special Concern

| Species | Status | Habitat | Occurrence on the Project Site |
|---------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loggerhead Shrike (<i>Lanius ludovicianus</i>) | CSC | Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, nests in riparian areas, desert scrub, and agricultural hedgerows. | Possible. Shrikes could forage in the site’s agricultural field and grassland habitats. Nesting habitat is absent from the site itself, but shrikes could potentially nest in trees or shrubs adjacent to the site. |
| Yellow-Headed Blackbird (<i>Xanthocephalus xanthocephalus</i>) | CSC | This breeding season migrant to the Central Valley nests in emergent wetland vegetation in shallow areas of marshes, ponds, and rivers. Forages in surrounding grasslands and croplands. | Unlikely. Nesting habitat is absent from the site and immediately surrounding lands. The site’s agricultural field and non-native grassland are theoretically suitable for foraging by this species; however, the yellow-headed blackbird is extremely uncommon in the region. It has been documented only once in Kings County, nesting in marsh vegetation in a canal approximately 12 miles west of the project site in 2016. |

Occurrence Terminology:

| | |
|------------------|-------------------------------------------------------------------------------------------------------------|
| Present: | Species observed on the site at time of field surveys or during recent past. |
| Likely: | Species not observed on the site, but it may reasonably be expected to occur there on a regular basis. |
| Possible: | Species not observed on the site, but it could occur there from time to time. |
| Unlikely: | Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient. |
| Absent: | Species not observed on the site, and precluded from occurring there because habitat requirements not met. |

STATUS CODES

| | | | |
|------|--------------------------------------------------------------------|-----|---------------------------------------------------------------------------------|
| FE | Federally Endangered | CE | California Endangered |
| FT | Federally Threatened | CT | California Threatened |
| FPE | Federally Endangered (Proposed) | CCE | California Endangered (Candidate) |
| FPT | Federally Threatened (Proposed) | CFP | California Fully Protected |
| FC | Federal Candidate | CSC | California Species of Special Concern |
| CNPS | California Native Plant Society Listing | | |
| 1A | Plants Presumed Extinct in California | 2 | Plants Rare, Threatened, or Endangered in California, but more common elsewhere |
| 1B | Plants Rare, Threatened, or Endangered in California and elsewhere | | |

2.6 JURISDICTIONAL WATERS

Jurisdictional waters are those subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), CDFW, and/or Regional Water Quality Control Board (RWQCB). Jurisdictional waters generally include rivers, creeks, drainages with a defined bed and bank and

flows that are at least ephemeral, lakes, ponds, reservoirs, and wetlands. See Section 3.2.7 of this report for additional information.

The proposed pipeline alignment intersects Cross Creek, Lakeland Canal, Highline Canal, and several unnamed canals. Because the State Water Resources Control Board and local RWQCBs have jurisdiction over all surface and ground water in California, these features are, at a minimum, waters of the State subject to the regulatory authority of the RWQCB. The USACE has historically asserted jurisdiction over Cross Creek, and it is assumed that CDFW would, as well. The USACE does not generally assert jurisdiction over canals unless the channel receives from and discharges into a water of the U.S. While the Highline Canal appears to receive water from the Kings River and all other on-site canals from Cross Creek, none appear to discharge to a water of the U.S. Therefore, the site's canals are not expected to be subject to the regulatory authority of the USACE. None of the canals are likely to be claimed by CDFW because none appear to replace a natural drainage or support riparian vegetation.

2.7 SENSITIVE NATURAL COMMUNITIES

California contains a wide range of natural communities, or unique assemblages of plants and animals. These communities have largely been classified and mapped by CDFW as part of its natural heritage program. Natural communities are assigned state and global ranks according to their rarity and the magnitude and trend of the threats they face. Any natural community with a state rank of 3 or lower (on a 1-5 scale) is considered “sensitive” and must be considered in CEQA review.

Sensitive natural communities as mapped by CDFW are absent from the site and surrounding lands.

2.8 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys,

ridgelines, and rivers and creeks supporting riparian vegetation. As discussed, the proposed pipeline alignment intersects Cross Creek. Cross Creek in the project vicinity supports minimal riparian vegetation, somewhat limiting its value as a wildlife movement corridor. However, some wildlife would certainly utilize the creek bed and banks for travel, particularly while moving through agricultural lands and other intensive uses.

2.9 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of “critical habitat” when it lists species as threatened or endangered. Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Designated critical habitat is absent from the project site. The nearest unit of critical habitat is located approximately 7.5 miles southeast of the site, and is designated for the protection of the vernal pool fairy shrimp.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

In California, any project carried out or approved by a public agency that will result in a direct or reasonably foreseeable indirect physical change in the environment must comply with CEQA. The purpose of CEQA is to ensure that a project's potential impacts on the environment are evaluated, and methods for avoiding or reducing these impacts are considered, before the project is allowed to move forward. A secondary aim of CEQA is to provide justification to the public for the approval of any projects involving significant impacts on the environment.

According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest.” Although the lead agency may set its own CEQA significance thresholds, project impacts to biological resources are generally considered to be significant if they would meet any of the following criteria established in Appendix G of the CEQA Guidelines:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) requires the lead agency to make “mandatory findings of significance” if there is substantial evidence that a project may:

- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of an endangered, rare or threatened species.
- Achieve short-term environmental goals to the detriment of long-term environmental goals.
- Produce environmental effects that are individually limited but cumulatively considerable, meaning that the incremental effects of the project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 General Plan Policies of Kings County

In compliance with CEQA, the lead agency must consider whether the project conforms with applicable goals and policies of the Kings County General Plan.

Relevant biological resources policies in the Kings County General Plan include:

- To provide for the long-term protection of habitats, wildlife, and, in particular, special status species and sensitive habitats in Kings County (and reduce the likelihood of additional special status species being designated), while allowing for the orderly development and continued economic growth in the county.
- To ensure that county land use planning, development review, land use permitting, and public works development comply with the state and federal laws and regulations protecting special status species and sensitive habitats.
- To minimize significant adverse impacts to special status species and sensitive habitats due to new developments, particularly through the use of long-term habitat-based conservation plans.

- To seek cooperative efforts with the private development community, conservation groups, and state and federal land management agencies to protect special status species and sensitive habitats.
- To facilitate more timely and cost-effective methods to evaluate impacts on special status species and sensitive habitats and to develop appropriate, timely, and equitable avoidance measures and mitigation.
- To increase public awareness of the special status species and sensitive habitat issues in the county and the need for non-governmental entities to assist in the long-term conservation of such resources in the county.
- To cooperate with local, state, and federal agencies with land management responsibilities in Kings County in their efforts to protect special status species and sensitive habitats under their jurisdiction.
- To establish a “no net loss” policy for wetland (including, but not limited to riparian, marsh, and vernal pool) habitat in the county. Inherent in this goal is the intent to maintain riparian habitat as continuous corridors since this is consistent with the corridor nature of this habitat and the needs of its resident wildlife.

3.2.2 Threatened and Endangered Species

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as “threatened” or “endangered” under one or both Acts, and/or as “rare” under CESA. Under both Acts, “endangered” means a species is in danger of extinction throughout all or a significant portion of its range, and “threatened” means a species is likely to become endangered within the foreseeable future. Under CESA, “rare” means a species may become endangered if their present environment worsens. Both Acts prohibit “take” of listed species, defined under CESA as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86), and more broadly defined under FESA to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3).

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the “take” of listed species must generally enter into consultation with the USFWS

and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.2.3 Designated Critical Habitat

The USFWS often designates areas of “critical habitat” when it lists species as threatened or endangered. Critical habitat is defined by section 3(5)(A) of the federal Endangered Species Act as “(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.” The Act goes on to define “conservation” as “the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary.”

The designation of a specific area as critical habitat does not directly affect its ownership. Federal actions that result in destruction or adverse modification of critical habitat are, however, prohibited in the absence of prior consultation with the USFWS according to provisions of the act. Furthermore, recent appellate court cases require that federal actions affecting critical habitat promote the recovery of the listed species protected by the critical habitat designation.

The USFWS designates critical habitat for a species by identifying general areas likely to contain the species’ “primary constituent elements,” or physical or biological features of the landscape that the species needs to survive and reproduce. Although a unit of critical habitat for a particular species may be quite large, only those lands within the unit that contain the species’ primary constituent elements are actually considered critical habitat by the USFWS.

3.2.4 Migratory Birds

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the

Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Although the USFWS and its parent administration, the U.S. Department of the Interior, have traditionally interpreted the FMBTA as prohibiting incidental as well as intentional “take” of birds, a January 2018 legal opinion issued by the Department of the Interior now states that incidental take of migratory birds while engaging in an otherwise lawful activity is permissible under the FMBTA. However, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

3.2.5 Birds of Prey

Birds of prey are protected in California under provisions of the Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.2.6 Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of “take” by the CDFW.

3.2.7 Wetlands and Other Jurisdictional Waters

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into “navigable waters” (33 U.S.C. §1344), defined in the CWA as “the waters of the United States, including the territorial seas” (33 U.S.C. §1362(7)). The CWA does not, however,

supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA's passage in 1972. A variety of regulatory definitions have been promulgated by the two federal agencies responsible for implementing the CWA, the Environmental Protection Agency (EPA) and USACE. These definitions have been interpreted, and in some cases, invalidated, by federal courts.

In 2015, the EPA and USACE jointly issued the Clean Water Rule (CWR), providing a synthesized definition of waters of the U.S. based on statute, science, and federal court decisions to date. Subsequent litigation delayed implementation of the CWR. However, in August 2018, the CWR was enjoined in 22 states including California.

The CWR defines waters of the U.S. to include the following:

(a)(1) Waters: All waters used in interstate or foreign commerce (also known as traditional navigable waters), including all waters subject to the ebb and flow of the tide;

(a)(2) Waters: All interstate waters including interstate wetlands;

(a)(3) Waters: The territorial seas;

(a)(4) Waters: All impoundments of Waters of the U.S.;

(a)(5) Waters: All tributaries of (a)(1)-(a)(4) waters, where "tributary" refers to a water (natural or constructed) that contributes flow to another water and is characterized by the physical indicators of a bed and bank and an ordinary high water (OHW) mark;

(a)(6) Waters: Adjacent waters, defined as either (a) located in whole or in part within 100 feet of the OHW mark of (a)(1)-(a)(5) waters, or (b) located in whole or in part within the 100-year floodplain and within 1,500 feet of the OHW mark of (a)(1)-(a)(5) waters;

(a)(7) Waters: Western vernal pools, prairie potholes, Carolina bays and Delmarva bays, pocosins, and Texas coastal prairie wetlands, if determined on a case-specific basis to have a significant nexus to (a)(1)-(a)(3) waters;

(a)(8) Waters: Waters that do not meet the definition of adjacency, but are determined on a case-specific basis to have a significant nexus to (a)(1)-(a)(3) waters, and are either located in whole or in part within the 100-year floodplain of (a)(1)-(a)(3) waters, or located within 4,000 feet of the OHW mark of (a)(1)-(a)(5) waters.

The CWR also redefines exclusions from jurisdiction, which include:

(b)(1) Waters: Waste treatment systems;

(b)(2) Waters: Prior converted cropland;

(b)(3) Waters: Three types of ditches. A ditch may be a water of the U.S. only if it meets the definition of “tributary” and is not otherwise excluded under the provisions below.

- (i) Ditches with ephemeral flow that are not a relocated or excavated tributary;
- (ii) Ditches with intermittent flow that are not a relocated or excavated tributary or that do not drain wetlands;
- (iii) Ditches that do not flow, either directly or through another water, to an (a)(1)-(a)(3) water.

(b)(4) Waters: Other aquatic features:

- Artificially irrigated areas that would revert to dry land should application of irrigation water to that area cease.
- Artificially constructed lakes or ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, log cleaning ponds, cooling ponds, or fields flooded for rice growing.
- Artificial reflecting pools or swimming pools created in dry land.
- Small ornamental waters created in dry land for primarily aesthetic reasons.

- Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand or gravel that fill with water.
- Erosional features, including gullies, rills and other ephemeral features that do not meet the definition of a tributary, non-wetland swales, and lawfully constructed grassed waterways.
- Puddles.

(b)(5) Waters: Groundwater and artificially constructed subsurface drainage systems in dry land;

(b)(6) Waters: Stormwater control features constructed to convey, treat, or store stormwater created in dry land; does not include features that possess perennial flow, even if constructed in dry land.

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to Section 404 permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California (“Waters of the State”). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES)

program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.3 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION

As discussed in Section 1.0, the proposed project is the construction of an approximate 7.3-mile pipeline and a biogas upgrading facility. Pipeline installation will require an approximate 10' wide disturbance corridor, resulting in up to 8.8 acres of temporary disturbance, mostly to lands that have already been modified by agricultural practices, road operations, and other intensive uses. The pipeline will be installed underground, with all surface habitats allowed to return to pre-project conditions; therefore, no permanent impacts will result from this project component. Impacts from the biogas upgrading facility will permanently impact up to 1.7 acres of previously disturbed lands.

3.3.1 Tipton Kangaroo Rat

Potential Impacts. West of Avenue 6 and east of Cross Creek, the proposed pipeline alignment passes through approximately 400 feet of non-native grassland habitat potentially suitable for the Tipton kangaroo rat. Approximately 0.09 acres of this habitat is contained within the site. This habitat is proposed for temporary impacts only, as the pipeline will be installed below-ground

and surface habitats will be allowed to return to pre-project conditions following installation. Although this habitat may be temporarily unavailable to the Tipton kangaroo rat during construction, should they occur on site, it is at the northern end of approximately 3,000 acres of contiguous grasslands. Given the abundance of alternative habitat adjoining the project site, Tipton kangaroo rats are not expected to be substantially affected by the possible temporary loss of 0.09 acres of grassland habitat.

However, if Tipton kangaroo rats are present in this 0.09-acre area at the time of construction, individuals would be at risk of construction-related injury or mortality. The Tipton kangaroo rat is listed as endangered under both the federal and state Endangered Species Acts. Unauthorized take of the Tipton kangaroo rat would violate the FESA and CESA and be considered a significant impact of the project under CEQA.

Mitigation. The following measures will be implemented for the protection of the Tipton kangaroo rat.

Mitigation Measure 3.3.1a (Burrow Avoidance). In the absence of adequate surveys to determine Tipton kangaroo rat presence or absence, the project will observe a minimum 50-foot no-disturbance buffer around all small mammal burrows in grassland habitat.

Mitigation Measure 3.3.1b (Tipton Kangaroo Rat Surveys). If burrow avoidance is not feasible, focused protocol-level trapping surveys will be conducted by a qualified wildlife biologist that has been issued the appropriate permits by CDFW and USFWS to determine if Tipton kangaroo rats occur within the non-native grassland habitat of the project site. These surveys will be conducted in accordance with USFWS 2013 *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* well in advance of ground-disturbing activities.

Mitigation Measure 3.3.1c (Take Authorization). If the Tipton kangaroo rat is identified during the protocol-level surveys, the project applicant will consult with CDFW and USFWS to determine if take can be avoided. If take cannot be avoided, the applicant will obtain a USFWS Biological Opinion (BO) and CDFW Incidental Take Permit (ITP) and comply with all of the conservation measures in these documents prior to ground disturbance within Tipton kangaroo rat habitat. Compliance with the BO and ITP would mitigate impacts to Tipton kangaroo rat to a less than significant level under CEQA.

Implementation of these measures will reduce potential project impacts to the Tipton kangaroo rat to a less than significant level under CEQA and ensure compliance with state and federal laws protecting this species.

3.3.2 Swainson's Hawk

Potential Impacts. Potential nesting habitat for the Swainson's hawk is absent from the project site itself, but suitable nest trees occur on adjacent lands. If individuals of this species are nesting adjacent to the site at the time of construction, they could be disturbed by project activities such that they would abandon their nest(s). Project activities that adversely affect the nesting success of Swainson's hawks would violate state and federal laws (see Sections 3.2.4 to 3.2.6) and be considered a significant impact under CEQA.

The project will be constructed primarily within ruderal areas unsuitable for Swainson's hawk foraging. However, the project will temporarily disturb approximately 0.09 acres of non-native grassland habitat and permanently remove approximately 1.7 acres of fallow agricultural field, either of which could be used by foraging Swainson's hawks during the breeding season. Although temporarily disturbed areas of grassland will be unavailable to Swainson's hawks during construction, these areas will return to pre-project conditions following project completion and are expected to assume their former level of suitability for this species. The project will result in the permanent loss of 1.7 acres of potential Swainson's hawk foraging habitat. However, the permanent loss of 1.7 acres represents only a tiny fraction of available foraging habitat in the project vicinity in the form of approximately 3,000 acres of non-native grassland adjoining the project site and many square miles of agricultural fields. For the reasons stated above, project-related loss of habitat for the Swainson's hawk is considered less than significant under CEQA.

Mitigation. To avoid and minimize the potential for construction-related mortality/disturbance of nesting Swainson's hawks, the following measures adapted from the Swainson's Hawk Technical Advisory Committee (SHTAC) 2000 *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* will be implemented.

Mitigation Measure 3.3.2a (Construction Timing). In order to avoid impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside the nesting season, conservatively defined as February 1-September 15.

Mitigation Measure 3.3.2b (Preconstruction Surveys). If project-related activities must occur between February 1 and September 15, a qualified biologist will conduct preconstruction surveys for active Swainson's hawk nests within ½ mile of the site in accordance with the SHTAC (2000) guidelines. The guidelines define five survey periods

for Swainson's hawk: Period I: January 1-March 20; Period II: March 20-April 5; Period III: April 5-April 20; Period IV: April 21-June 10; and Period V: June 10-July 30. The guidelines prescribe a minimum of three surveys per survey period for at least the two survey periods immediately prior to a project's initiation, and specifically recommend that surveys be completed in Periods II, III, and V. Consistent with CDFW recommendations, an additional take avoidance survey for the Swainson's hawk will be conducted no more than 10 days prior to the start of construction.

Mitigation Measure 3.3.2c (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established based on local conditions and species biology. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will reduce potential project impacts to the Swainson's hawk to a less than significant level under CEQA, and will ensure compliance with state laws protecting this species.

3.3.3 San Joaquin Kit Fox

Potential Impacts. Although there are only two modern occurrences of the San Joaquin kit fox (SJKF) in the project vicinity, the SJKF is a wide-ranging species, and individuals may occasionally pass through or forage or den on the project site. If a kit fox were present at the time of construction, then it would be at risk of project-related injury or mortality. Kit fox mortality as a result of project activities would violate the state and federal Endangered Species Acts, and is considered a potentially significant impact under CEQA.

Installation of the proposed biogas pipeline will temporarily disturb lands that could occasionally be used by the kit fox. Following pipeline construction, all such areas will return to pre-project conditions and are expected to assume their former level of suitability for this species. Permanent project impacts will be limited to an approximate 1.7-acre area of the onsite fallow agricultural field that has been subjected to considerable disturbance from agricultural activity for decades. This area is of moderate value for SJKF due to periodic disturbance and the dense growth of weedy vegetation in this area at the time of the July 2019 field survey. A large amount of alternative habitat will remain available to locally occurring SJKF during construction, as the alignment passes through the northern end of an approximate 3,000-acre contiguous block of

grassland habitat. For these reasons, project-related loss of potential SJKF habitat is considered less than significant under CEQA.

Mitigation. To avoid and minimize the potential for project-related injury or mortality of the SJKF the following measures adapted from the U.S. Fish and Wildlife Service 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix D) will be implemented.

Mitigation Measure 3.3.3a (Pre-construction Surveys). Preconstruction surveys for the San Joaquin kit fox shall be conducted on and within 200 feet of the project site, no less than 14 days and no more than 30 days prior to the start of ground disturbance activities on the site. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on and adjacent to the site and evaluate their use by kit foxes.

Mitigation Measure 3.3.3b (Avoidance). Should active kit fox dens be detected during preconstruction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

Mitigation Measure 3.3.3c (Minimization). Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes in accordance with the USFWS *Standardized Recommendations*. The applicant shall implement all minimization measures presented in the Construction and On-going Operational Requirements section of the *Standardized Recommendations*, including, but not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g. pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash. See Appendix D for more details.

Mitigation Measure 3.3.3d (Employee Education Program). Prior to the start of construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation. The training will include a handout with all of the training information included in it. The applicant will use this handout to train any construction personnel that were not in attendance at the first meeting, prior to those personnel starting work on the site.

Mitigation Measure 3.3.3e (Mortality Reporting). The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures will reduce potential impacts to the San Joaquin kit fox to a less than significant level under CEQA and ensure compliance with state and federal laws protecting this species.

3.3.4 Burrowing Owl

Potential Impacts. At the time of the field surveys, burrowing owls were observed occupying burrows on the banks of canals immediately adjacent to the proposed pipeline alignment. Although not observed, burrowing owls also have the potential to roost and nest in the site's fallow agricultural field and grassland habitat. If individual owls are occupying burrows on or immediately adjacent to the project site at the time of construction, then these owls would be at risk of construction-related injury or mortality. Construction mortality of the burrowing owl would constitute a violation of state laws (see Sections 3.2.5 and 3.2.6) and is a potentially significant impact of the project under CEQA.

Installation of the proposed biogas pipeline will temporarily disturb lands that could be used by burrowing owls for roosting, nesting, and foraging. Following construction, all areas known to be utilized by burrowing owls will return to pre-project conditions and are expected to assume their former level of suitability for this species. Permanent project impacts will be limited to an approximate 1.7-acre area of the onsite fallow agricultural field that has been subjected to considerable disturbance from agricultural activity for decades. This area is of relatively low value for the burrowing owl due to periodic disturbance and the dense growth of weedy vegetation in this area at the time of the July 2019 field survey. Because all project-related impacts to areas known to be utilized by burrowing owls will be temporary, and because areas proposed for permanent impacts are of low habitat value for the burrowing owl, project-related loss of burrowing owl habitat is considered less than significant under CEQA.

Mitigation. To avoid and minimize the potential for project-related injury or mortality of the burrowing owl the project applicant will implement the following measures adapted from the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012).

Mitigation Measure 3.3.4a (Take Avoidance Survey). A take avoidance survey for burrowing owls will be conducted by a qualified biologist between 14 and 30 days prior to the start of construction. This take avoidance survey will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey area will include all suitable habitat on and within 200 meters of project impact areas, where accessible.

Mitigation Measure 3.3.4b (Avoidance of Active Nests and Roosts). If project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer will be established around these burrows. During the non-breeding season (September 1-January 31), resident owls occupying burrows in or near project impact areas will be avoided through the establishment of a 50-meter disturbance-free buffer or passively relocated to alternative habitat as described below. Smaller buffer areas during the non-breeding season may be implemented with the presence of a qualified biological monitor during all activities occurring within 50 meters of occupied burrows. Buffers will remain in place for the duration of project activities occurring within the vicinity of burrowing owl activity.

Mitigation Measure 3.3.4c (Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat. This activity would be conducted in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50-foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50-foot buffer and up to 50 meters outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50-foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50-foot buffer.

Implementation of the above measures will reduce potential project impacts to the burrowing owl to a less than significant level under CEQA and ensure compliance with state laws protecting this species.

3.3.5 Project-Related Mortality/Disturbance of Nesting Migratory Birds and Raptors including the White-Tailed Kite, Northern Harrier, and Loggerhead Shrike

Potential Impacts. Most of the project site consists of habitat that could be used for nesting by one or more avian species protected by state laws. Killdeer may nest on bare ground in ruderal areas. The site's non-native grassland habitat could be used by ground-nesting species such as the western meadowlark and mourning dove. The vegetated banks of Cross Creek and the fallow agricultural field could possibly be used for nesting by the northern harrier. Adjacent trees could be used for nesting by a variety of birds, possibly including the white-tailed kite (*Elanus leucurus*) and loggerhead shrike (*Lanius ludovicianus*). If project construction takes place during the nesting season, birds nesting on or immediately adjacent to the site could be injured or killed by construction activities, or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the project site. Construction-related mortality of nesting birds and disturbance leading to nest abandonment would violate state laws and constitute a significant impact under CEQA.

Although installation of the proposed pipeline will temporarily disturb a small amount of non-native grassland habitat that could be used for foraging by the northern harrier, white-tailed kite, and loggerhead shrike, such areas will return to pre-project conditions following construction and are expected to assume their former level of suitability for these species. The project will permanently remove an approximate 1.7-acre area of onsite fallow agricultural field that could be used from time to time by the same three special status birds. Similar agricultural lands are abundant in the project vicinity, and the project site is adjoined by a large block of grasslands that could represent alternative habitat for any special status birds temporarily unable to nest or forage in the site's grassland habitat during construction. For these reasons, project-related loss of habitat for the white-tailed kite, northern harrier, and loggerhead shrike is considered less than significant under CEQA.

Mitigation. The following measures will be implemented prior to the start of construction.

Mitigation Measure 3.3.5a (Avoidance). In order to avoid impacts to nesting raptors and migratory birds, the project will be constructed, if feasible, from September 16th and January 31st which is outside the avian nesting season.

Mitigation Measure 3.3.5b (Preconstruction Surveys). If project activities must occur during the nesting season (February 1-September 15), a qualified biologist will conduct preconstruction surveys for active raptor and migratory bird nests within 10 days prior to the start of these activities. The survey will include the proposed work area(s) and surrounding lands within 500 feet, where accessible, for all nesting raptors and migratory birds. If no active nests are found within the survey area, no further mitigation is required.

Mitigation Measure 3.3.2c (Establish Buffers). Should any active nests be discovered near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will reduce potential project impacts to nesting raptors and migratory birds including the white-tailed kite, northern harrier, and loggerhead shrike to a less than significant level under CEQA, and will ensure compliance with state laws protecting these species.

3.4 LESS THAN SIGNIFICANT PROJECT IMPACTS

3.4.1 Project Impacts to Special Status Plants

Potential Impacts. Seven special status vascular plant species have been documented in the project vicinity (see Table 2). These plant species are considered absent from or unlikely to occur on the project site based on survey results and/or the absence of suitable habitat. The project is not expected to affect individuals or populations of these species. Potential project impacts to special status plants are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.4.2 Project Impacts to Special Status Animals Absent from, or Unlikely to Occur on, the Project Site

Potential Impacts. Of the 18 special status animal species potentially occurring in the region, nine species would be absent from, or unlikely to occur on, the site due to the absence of suitable habitat and/or the distance of the site from their known distributions. These include the vernal

pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), blunt-nosed leopard lizard (*Gambelia sila*), western snowy plover (*Charadrius alexandrinus nivosus*), lesser sandhill crane (*Grus canadensis canadensis*), Nelson's antelope squirrel (*Ammospermophilus nelsoni*), western spadefoot (*Spea hammondi*), western pond turtle (*Actinemys marmorata*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Since there is little to no likelihood that these species would use the site, project development is not likely to adversely affect these species, and project impacts are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.4.3 Project Impacts to Special Status Animals that May Occur on the Project Site as Occasional or Regular Foragers but Breed/Nest/Den Elsewhere

Potential Impacts. Of the 18 special status animals potentially occurring in the project vicinity, two species, the tricolored blackbird (*Agelaius tricolor*) and mountain plover (*Charadrius montanus*), may utilize the project site for foraging but would not breed, nest, or den on-site. These birds have the potential to forage in the site's fallow agricultural field and non-native grassland habitat from time to time. Neither species would be vulnerable to construction-related injury or mortality while foraging because they are highly mobile, and would be expected to simply fly away from active construction zones. Installation of the proposed pipeline will render a small amount of grassland habitat temporarily unavailable for the two bird species. Approximately 1.7 acres of fallow agricultural field will be lost to the development of the proposed biogas upgrade facility. However, the site is adjoined by extensive agricultural fields and grasslands that provide plentiful foraging opportunities for these species during and after project construction. Furthermore, temporarily impacted areas of grassland habitat are expected to return to pre-project conditions and foraging value after construction. For these reasons, potential project impacts to the tricolored blackbird and mountain plover are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.4.4 Project Impacts to Fish and Wildlife Movements, Movement Corridors, and Use of Nursery Sites.

Potential Impacts. As discussed, the project site contains one feature, Cross Creek, that may function as a movement corridor for locally occurring wildlife, albeit a corridor of modest value due to the lack of riparian cover. Installation of the proposed pipeline may temporarily disrupt wildlife movements along Cross Creek. Work at this location will be short-term and extremely limited in scale. The project will utilize horizontal directional drilling to install the pipeline beneath the creek channel, with no associated impact to surface habitats. Short-term construction disturbance at Cross Creek is not expected to substantially impede the movement of native fish or wildlife species. For these reasons, project impacts to wildlife movements and established movement corridors are considered less than significant under CEQA.

The project site does not contain any features likely to function as wildlife nursery sites.

Mitigation. Mitigation measures are not warranted.

3.4.5 Project Impacts to Jurisdictional Waters

Potential Impacts. As discussed, the project site's canals and creek are waters of the State subject to the regulatory authority of the RWQCB. Cross Creek is also a known water of the U.S. and is additionally likely to be within the jurisdiction of CDFW. The project will utilize horizontal directional drilling to install the pipeline across these features, with no associated impact to jurisdictional areas.

Mitigation. Mitigations are not warranted.

3.4.6 Project Impacts to Riparian Habitat and other Sensitive Habitats

Potential Impacts. No riparian or other sensitive habitats, including sensitive natural communities and designated critical habitat, occur on the project site. Because these habitats are absent from the project site, they will not be impacted by project activities.

Mitigation. Mitigation measures are not warranted.

3.4.7 Local Policies or Habitat Conservation Plans

Potential Impacts. The proposed project appears to be consistent with the goals and policies of the Kings County General Plan. No known Habitat Conservation Plans or Natural Community Conservation Plans are in effect for the area. Therefore, the project would be carried out in compliance with local policies and ordinances.

Mitigation. No mitigation is warranted.

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APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

The vascular plant species listed below were observed within the project site during a site survey conducted by Live Oak Associates, Inc. on January 11, 2018, and/or February 19, May 3, or July 12, 2019. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
 FACW - Facultative Wetland
 FAC - Facultative
 FACU - Facultative Upland
 UPL - Upland
 NR - No review
 NA - No agreement
 NI - No investigation

AMARANTHACEAE – Pigweed Family

| | | |
|-------------------------|------------------|------|
| <i>Amaranthus albus</i> | Pigweed Amaranth | FACU |
|-------------------------|------------------|------|

ASTERACEAE – Sunflower Family

| | | |
|--------------------------------|-----------------------|------|
| <i>Ambrosia acanthicarpa</i> | Annual Burweed | UPL |
| <i>Artemisia douglasiana</i> | California Mugwort | FAC |
| <i>Centromadia pungens</i> | Common Tarweed | FAC |
| <i>Erigeron bonariensis</i> | Flax-leaved Horseweed | FACU |
| <i>Erigeron canadensis</i> | Canada Horseweed | FACU |
| <i>Grindelia camporum</i> | Great Valley Gumweed | FACW |
| <i>Helianthus annuus</i> | Common Sunflower | FACU |
| <i>Heterotheca grandiflora</i> | Telegraph Weed | UPL |
| <i>Lactuca serriola</i> | Prickly Lettuce | FACU |
| <i>Xanthium strumarium</i> | Rough Cocklebur | FAC |

BORAGINACEAE- Borage Family

| | | |
|----------------------|------------|-----|
| <i>Amsinckia</i> sp. | Fiddleneck | UPL |
|----------------------|------------|-----|

BRASSICACEAE – Mustard Family

| | | |
|--------------------------------|------------------|------|
| <i>Brassica nigra</i> | Black Mustard | UPL |
| <i>Capsella bursa-pastoris</i> | Shepherd's Purse | FACU |
| <i>Lepidium nitidum</i> | Peppergrass | FAC |
| <i>Sisymbrium irio</i> | London Rocket | UPL |

CHENOPODIACEAE – Goosefoot Family

| | | |
|----------------------------|-----------------------|------|
| <i>Atriplex polycarpa</i> | Allscale | FACU |
| <i>Atriplex suberecta</i> | Peregrine Saltbush | FACU |
| <i>Bassia hyssopifolia</i> | Fivehook Bassia | FACU |
| <i>Chenopodium murale</i> | Nettle Leaf Goosefoot | FACU |
| <i>Salsola tragus</i> | Russian Thistle | FACU |

| | | |
|----------------------------------------------|----------------------|------|
| CONVOLVULACEAE – Morning Glory Family | | |
| <i>Cuscuta sp.</i> | Dodder | UPL |
| <i>Cressa truxillensis</i> | Alkali Weed | FACW |
| CUCURBITACEAE – Gourd Family | | |
| <i>Citrullus lanatus var. citroides</i> | Watermelon | UPL |
| CYPERACEAE - Sedge Family | | |
| <i>Cyperus erythrorhizos</i> | Redroot Flatsedge | OBL |
| EUPHORBIACEAE - Spurge Family | | |
| <i>Croton setigerus</i> | Turkey Mullein | UPL |
| <i>Euphorbia maculata</i> | Spotted Spurge | UPL |
| GERANIACEAE- Geranium Family | | |
| <i>Erodium cicutarium</i> | Red Stemmed Filaree | UPL |
| MALVACEAE – Mallow Family | | |
| <i>Malva parviflora</i> | Cheeseweed Mallow | UPL |
| <i>Malvella leprosa</i> | Alkali Mallow | FACU |
| ONAGRACEAE - Evening Primrose Family | | |
| <i>Epilobium brachycarpum</i> | Annual Fireweed | UPL |
| PHRYMACEAE - Lopseed Family | | |
| <i>Erythranthe guttata</i> | Yellow Monkey Flower | OBL |
| POACEAE – Grass Family | | |
| <i>Avena sp.</i> | Wild Oat | UPL |
| <i>Bromus catharticus</i> | Rescue Grass | UPL |
| <i>Bromus diandrus</i> | Ripgut Brome | UPL |
| <i>Bromus hordeaceus</i> | Soft Chess | FACU |
| <i>Bromus madritensis ssp. rubens</i> | Red Brome | UPL |
| <i>Cynodon dactylon</i> | Bermuda Grass | FACU |
| <i>Echinochloa crus-galli</i> | Barnyard Grass | FACW |
| <i>Hordeum murinum ssp. leporinum</i> | Barnyard Barley | FACU |
| <i>Leptochloa fusca</i> | Sprangletop | FACW |
| <i>Poa annua</i> | Annual Bluegrass | FAC |
| POLYGONACEAE- Buckwheat Family | | |
| <i>Persicaria lapathifolia</i> | Common Knotweed | FACW |
| <i>Rumex crispus</i> | Curly Dock | FAC |
| PORTULACACEAE- Purslane Family | | |
| <i>Portulaca oleracea</i> | Common Purslane | FAC |
| RUBIACEAE – Coffee Family | | |
| <i>Cephalanthus occidentalis</i> | Common Buttonbush | OBL |
| SOLANACEAE – Nightshade Family | | |
| <i>Datura wrightii</i> | Jimson Weed | UPL |
| <i>Nicotiana glauca</i> | Tree Tobacco | FAC |
| <i>Solanum nigra</i> | Black Nightshade | UPL |
| URTICACEAE- Nettle Family | | |
| <i>Urtica dioica</i> | Stinging Nettle | FAC |
| VERBENACEAE- Verbena Family | | |
| <i>Phyla nodiflora</i> | Common Lippia | FACW |

ZYGOPHYLLACEAE—Caltrop Family

Tribulus terrestris

Puncturevine

UPL

**APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY
OCCUR ON THE PROJECT SITE**

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site during the January 11, 2018 and/or February 19, May 3, or July 12, 2019 field surveys have been noted with an asterisk.

CLASS: AMPHIBIA (Amphibians)

ORDER: SALIENTIA (Frogs and Toads)

FAMILY: BUFONIDAE (True Toads)

Western Toad (*Bufo boreas*)

FAMILY: HYLIDAE (Treefrogs and relatives)

Pacific Tree Frog (*Pseudacris regilla*)

FAMILY: RANIDAE (True Frogs)

*Bullfrog (*Lithobates catesbeianus*)

CLASS: REPTILIA (Reptiles)

ORDER: SQUAMATA (Lizards and Snakes)

SUBORDER: SAURIA (Lizards)

FAMILY: PHRYNOSOMATIDAE

Western Fence Lizard (*Sceloporus occidentalis*)

Side-blotched Lizard (*Uta stansburiana*)

SUBORDER: SERPENTES (Snakes)

FAMILY: COLUBRIDAE (Colubrids)

Pacific Gopher Snake (*Pituophis catenifer catenifer*)

Common Kingsnake (*Lampropeltis getulus*)

Common Garter Snake (*Thamnophis sirtalis*)

CLASS: AVES (Birds)

ORDER: ANSERIFORMES (Ducks, Geese, and Swans)

FAMILY: ANATIDAE (Ducks, Geese, and Swans)

*Mallard (*Anas platyrhynchos*)

ORDER: SULIFORMES (Frigatebirds, Gannets, and Cormorants)

FAMILY: PHALACROCORACIDAE (Cormorants)

*Double-crested Cormorant (*Phalacrocorax auritis*)

ORDER: CICONIIFORMES (Herons, Storks, Ibises and Relatives)

FAMILY: ARDEIDAE (Herons and Bitterns)

*Great Blue Heron (*Ardea herodias*)

Cattle Egret (*Bubulcus ibis*)

Snowy Egret (*Egretta thula*)

*Great Egret (*Ardea alba*)

FAMILY: THRESKIORNITHIDAE (Ibises and Spoonbills)

*White-faced Ibis (*Plegadis chihi*)

ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)

FAMILY: CATHARTIDAE (American Vultures)

*Turkey Vulture (*Cathartes aura*)

FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)

White-tailed Kite (*Elanus leucurus*)

Northern Harrier (*Circus cyaneus*)

*Swainson's Hawk (*Buteo swainsoni*)

*Red-tailed Hawk (*Buteo jamaicensis*)

*Sharp-shinned Hawk (*Accipiter striatus*)

FAMILY: FALCONIDAE (Caracaras and Falcons)

*American Kestrel (*Falco sparverius*)

ORDER: GRUIFORMES (Cranes, Rails and Relatives)

FAMILY: RALLIDAE (Rails, Gallinules, and Coots)

*American Coot (*Fulica Americana*)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)

FAMILY: CHARADRIIDAE (Plovers and relatives)

*Killdeer (*Charadrius vociferus*)

FAMILY: COLOPACIDAE (Sandpipers and Relatives)

*Greater Yellowlegs (*Tringa melanoleuca*)

Lesser Yellowlegs (*Tringa flavipes*)

Spotted Sandpiper (*Actitis macularia*)

Long-Billed Curlew (*Numenius americanus*)

*Western Sandpiper (*Calidris mauri*)

*Least Sandpiper (*Calidris minutilla*)

Dunlin (*Calidris alpina*)

Long-Billed Dowitcher (*Limnodromus scolopaceus*)

FAMILY: RECURVIROSTRIDAE (Stilts and Avocets)

*Black-necked Stilt (*Himantopus mexicanus*)

American Avocet (*Recurvirostra americana*)

FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)

*Ring-Billed Gull (*Larus delawarensis*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

*Rock Pigeon (*Columba livia*)

*Mourning Dove (*Zenaida macroura*)

*Eurasian Collared-Dove (*Streptopelia decaocto*)

ORDER: STRIGIFORMES (Owls)

FAMILY: TYTONIDAE (Barn Owls)

Barn Owl (*Tyto alba*)

FAMILY: STRIGIDAE (Typical Owls)

*Burrowing Owl (*Athene cunicularia*)

ORDER: APODIFORMES (Swifts and Hummingbirds)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-chinned Hummingbird (*Archilochus alexandri*)

Anna's Hummingbird (*Calypte anna*)

Rufous Hummingbird (*Selasphorus rufus*)
ORDER: PICIFORMES (Woodpeckers and relatives)
FAMILY: PICIDAE (Woodpecker and Wrynecks)
 Northern Flicker (*Colaptes chrysoides*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
 *Black Phoebe (*Sayornis nigricans*)
 Say's Phoebe (*Sayornis saya*)
 *Western Kingbird (*Tyrannus verticalis*)
FAMILY: LANIIDAE (Shrikes)
 Loggerhead Shrike (*Lanius ludovicianus*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
 *American Crow (*Corvus brachyrhynchos*)
 *Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
 *Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
 *Cliff Swallow (*Petrochelidon pyrrhonota*)
 Barn Swallow (*Hirundo rustica*)
FAMILY: TURDIDAE
 American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
 *Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings)
 *European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
 *American Pipit (*Anthus rubescens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
 *Yellow-rumped Warbler (*Dendroica coronata*)
FAMILY: EMBERIZIDAE (Sparrows and Relatives)
 *Savannah Sparrow (*Passerculus sandwichensis*)
 *White-crowned Sparrow (*Zonotrichia leucophrys*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
 *Red-winged Blackbird (*Agelaius phoeniceus*)
 Tricolored Blackbird (*Agelaius tricolor*)
 *Western Meadowlark (*Sturnella neglecta*)
 *Brewer's Blackbird (*Euphagus cyanocephalus*)
 Great-Tailed Grackle (*Quiscalus mexicanus*)
 Brown-headed Cowbird (*Molothrus ater*)
 Bullock's Oriole (*Icterus bullockii*)
FAMILY: FRINGILLIDAE (Finches)
 *House Finch (*Carpodacus mexicanus*)
 Lesser Goldfinch (*Carduelis psaltria*)
FAMILY: PASSERIDAE (Old World Sparrows)
 *House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)
ORDER: DIDELPHIMORPHIA (Marsupials)
FAMILY: DIDELPHIDAE (Opossums)
Virginia Opossum (*Didelphis virginiana*)
ORDER: CHIROPTERA (Bats)
FAMILY: PHYLLOSTOMIDAE (Leaf-nosed Bats)
Southern Long-nosed Bat (*Leptonycteris curasoae*)
FAMILY: VESPERTILIONIDAE (Evening Bats)
Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Pale Big-eared Bat (*Corynorhinus townsendii pallascens*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
*Audubon's Cottontail (*Sylvilagus audubonii*)
ORDER: RODENTIA (Rodents)
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)
*California Ground Squirrel (*Otospermophilus beecheyi*)
FAMILY: GEOMYIDAE (Pocket Gophers)
*Botta's Pocket Gopher (*Thomomys bottae*)
FAMILY: MURIDAE (Old World Rats and Mice)
Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and relatives)
Coyote (*Canis latrans*)
Red Fox (*Vulpes vulpes*)
FAMILY: PROCYONIDAE (Raccoons and relatives)
Raccoon (*Procyon lotor*)
FAMILY: MEPHITIDAE (Skunks)
Striped Skunk (*Mephitis mephitis*)

APPENDIX C: SELECTED PHOTOGRAPHS OF THE PROJECT SITE



Photo 1 (above): Examples of ruderal lands that will be impacted by the biogas pipeline. **Photo 2 (below):** Area of fallow agricultural field that will be impacted by the biogas upgrade facility.



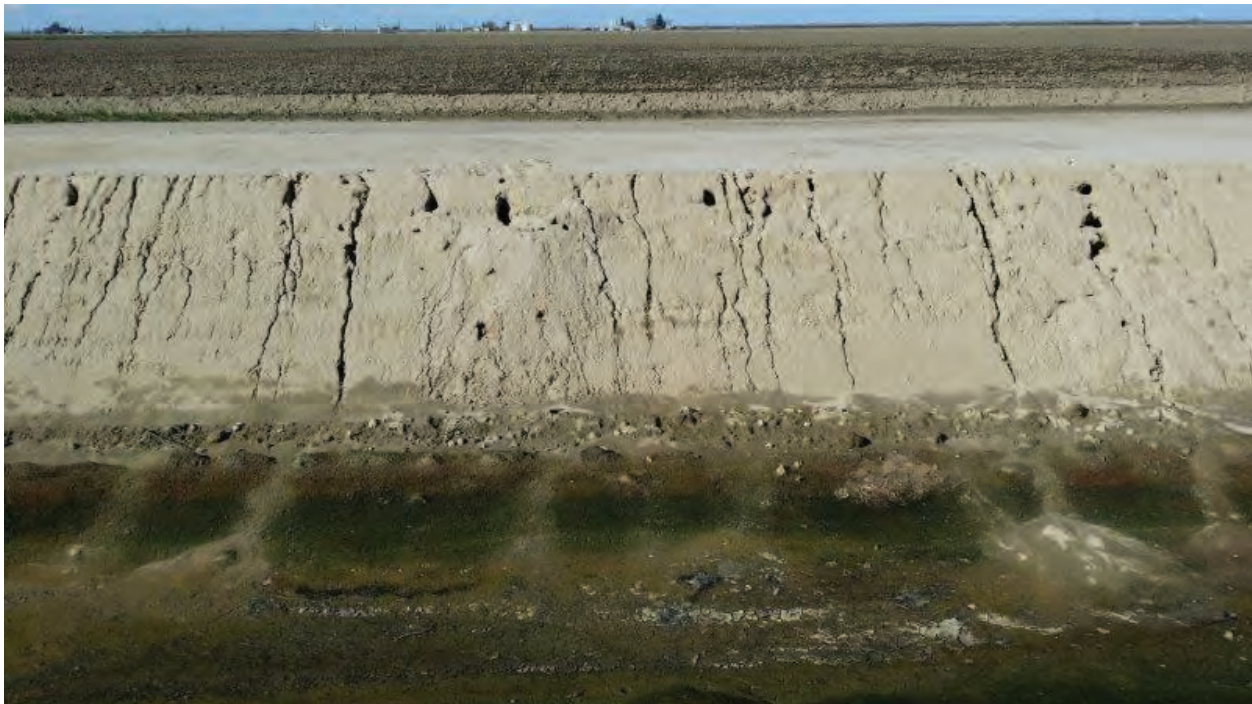


Photo 3 (above): Strip of non-native grassland habitat between the dirt road and fence-line through which the proposed pipeline alignment passes. **Photo 4 (below):** Another example of ruderal land in which the proposed pipeline will be placed, flanked by adjacent agricultural fields.





Photo 5 (above): Cross Creek at the approximate location of the proposed pipeline crossing.
Photo 6 (below): One of the canals along the proposed pipeline alignment.



**APPENDIX D: USFWS 2011 STANDARDIZED RECOMMENDATIONS FOR THE
PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR
DURING GROUND DISTURBANCE**

**U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

| | |
|-------------------------------------------------------|---------------------------|
| Potential den** | 50 feet |
| Atypical den** | 50 feet |
| Known den* | 100 feet |
| Natal/pupping den (occupied <u>and</u> unoccupied) | Service must be contacted |

***Known den:** To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

****Potential and Atypical dens:** Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection.

Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe

may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site.
6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.
8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.
9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is

disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT “A” - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Appendix C

Cultural Records Search Results & Cultural Resources Report



To: Molly McDonnel
4 Creeks, Inc.
324 S. Santa Fe St., Suite A
Visalia, CA 93292

Record Search 19-327

Date: August 19, 2019

Re: Hanford Biogas Cluster Project

County: Kings

Map(s): Guernsey & Waukena 7.5's

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, Historic Property Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been three previous cultural resource studies conducted within small portions of the project area, KI-00094, KI-00171, and KI-00218. There have been no additional studies within the one-half mile radius.

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

There two recorded cultural resources within the project area, P-16-000086 and P-16-000120. There are two recorded resources within the one-half mile radius, P-16-000017 and P-16-000253. These resources consist of an historic era ditch, an historic era canal, an historic era railroad, and a destroyed prehistoric era site consisting of habitation debris and human remains.


There are no recorded cultural resources within the project area that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project consists of installation of a 7.3-mile biogas pipeline and construction of an 8,360 square foot biogas upgrade facility. Further, we understand the pipeline will be installed under roads and canals where existing land uses are agriculture and public-right-of-way. We also understand the biogas upgrade facility will be located at the Grimmus Cattle Company property. Please note that agriculture does not constitute previous development, as it does not destroy cultural resources, but merely moves them around within the plow zone. Due to the proximity of this project to the Tulare Lakebed, this region of Kings County is considered to have a moderate to high level of sensitivity for cultural resources. Because a cultural resources study has not been previously conducted on most of this project area, it is unknown if any cultural resources are present. Therefore, prior to any ground disturbance activities, we recommend a qualified, profession consultant conduct a field survey of the entire project area to determine if cultural resources are present. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file in order to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:



Celeste M. Thomson, Coordinator

Date: August 19, 2019

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

**CLASS III INVENTORY/PHASE I SURVEY,
BIOGAS CLUSTER PROJECT, HANFORD, KINGS
COUNTY, CALIFORNIA**

Prepared for:

Ms. Molly McDonnel
4-Creeks, Inc.
324 S. Santa Fe, Suite A
Visalia, CA 93292

Prepared by:

David S. Whitley, Ph.D., RPA
Principal Investigator

and

Robert Azpitarte, B.A.
Associate Archaeologist

ASM Affiliates
20424 West Valley Blvd., Suite A
Tehachapi, California 93561

September 2019
PN 32120.00

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MANAGEMENT SUMMARY

An intensive Class III cultural resources inventory/Phase I survey was conducted for the Biogas Cluster Project, Kings County, California. The project area is located approximately eight miles south of the City of Hanford in Sections 13, 14, 23, and 24, Township 20 South, Range 21 East, and Sections 6, 7, 9, 10, 14, 15, 16, 17, and 18 Township 20 South, Range 22 East and Mount Diablo Base and Meridian, Kings County, California. ASM Affiliates, Inc., conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with the regulatory requirements for compliance with the California Environmental Quality Act and Section 106 of the National Historic Preservation Act.

A record search of site files and maps was conducted on 25 March 2019 at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A Sacred Lands File Request was also completed by the Native American Heritage Commission (NAHC) on 20 March 2018. These investigations determined that the study area had only been partially surveyed previously, and that three historical resources were known to exist within it. Outreach and request for consultation letters were sent to tribal organizations on the contact list provided by the NAHC. Follow-up phone calls were also made to the contact list. The Santa Rosa Rancheria responded by email, indicating concern for possible sub-surface archaeological sites within the project area and requesting that a tribal monitor be present during project construction.

The Class III inventory/Phase I survey fieldwork was conducted on April 19th and 21st, 2019 for an original 9.4-miles (mi) of proposed pipeline route and proposed facility. A revised/augmented study area, measuring approximately 3.5-mi, was surveyed on September 10, 2019. The final pipeline route, which incorporates parts of the original survey area and the entirety of the revised/augmented study area, will be approximately 7.3-mi long with a biogas upgrading facility that is 7.4-acres (ac) in size.

Parallel transects spaced at 15-meter intervals walked along the approximately 142-acre total original and augmented/revised study areas. Segments of three previously recorded linear cultural resources were identified and documented during the initial survey: the Lakeside Ditch (P-16-000086/CA-KIN-114H), the Highline Canal (P-16-000253/CA-KIN-104H), and the Burlington Northern and Santa Fe Railway (BNSF; P-16-000120). All three resources had been previously recommended as not NRHP/CRHR eligible; we concur with those recommendations. A second segment of the Lakeside Ditch was documented in the augmented study area along with a newly recorded resource, the Lakeland Canal. Both resources are recommended as not NRHP/CRHR eligible or significant.

Based on these findings, the construction of the Biogas Cluster Project does not have the potential to result in adverse impacts or effects to known significant historical resources or historic properties. Based on the request by the Santa Rosa Rancheria Tachi-Yokuts, the presence of a tribal monitor is recommended during project construction. In the unlikely event that cultural resources are identified during the project, it is recommended that a qualified archaeologist also be contacted to evaluate the newly discovered resource.

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1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc., was retained by 4-Creeks, Inc., to conduct an intensive Class III inventory/Phase I cultural resources survey for the Biogas Cluster Project (Project), Kings County, California. The Project study area is located in Sections 13, 14, 23, and 24, Township 20 South, Range 21 East, and Sections 6, 7, 9, 10, 14, 15, 16, 17, and 18 Township 20 South, Range 22 East, Mount Diablo Base and Meridian (Figures 1 - 5). The study was undertaken to assist with the regulatory requirements for compliance with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources or historic properties do not occur as a result of project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and ASM Associate Archaeologist/Crew Chief Robert Azpitarte, B.A., conducted the fieldwork, with the assistance of ASM Assistant Archaeologists Stacey Escamilla, B.A., Tim Polkinghorne, B.A., and Jennifer Heffler, B.A.

This document constitutes a report on the Class III inventory/Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; Native American outreach; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 PROJECT LOCATION

The Biogas Cluster Project is located within rural agricultural fields just east of the unincorporated community of Guernsey, California. The proposed Project area is approximately 8 miles (mi) south of the City of Hanford and 7-mi north of the City of Corcoran. This places the Project area on the open flats of the San Joaquin Valley. Elevation within the Project area, which is flat, ranges between roughly 195-feet (ft) above mean sea level (amsl) and 220-ft amsl. The Project area is surrounded by agricultural fields, orchards, dairy farms, and farm facilities on all sides.

1.2 PROJECT DESCRIPTION AND APE

The proposed Project consists of the construction and operation of approximately 7.3-mi of pipeline and a 7.4-acre (ac) biogas upgrading facility. The pipeline begins on Cloverdale Dairy and travels east for approximately 1.3 miles along an existing canal before turning north for approximately 0.55 miles and then east for approximately 0.48 miles where the pipeline crosses BNSF railroad, approximately 0.4 miles south of Lansing Avenue. The pipeline travels south parallel to the railroad for approximately 650 feet before turning east for approximately 1.3 miles where the pipeline connects to the existing anaerobic digester at Wreden Ranch Dairy. The pipeline then travels north, parallel to Highway 43, for approximately 0.5 miles, west for 0.5 miles, and north for 0.5 miles to connect to the existing anaerobic digester at Hollandia Dairy. From Hollandia Dairy, the pipeline travels east for approximately 1 mile, north for approximately 0.25 miles, and west for approximately 0.6 miles where it crosses 6th Avenue and connects to the proposed biogas upgrading facility located.

The biogas pipeline will be 12” in diameter at its widest point and will be located at least 72” below the existing ground surface where the pipeline is installed within cultivated farmland and 36” below the existing ground surface in access roads/uncultivated areas. The expected affected area is approximately 10 feet wide per linear foot of pipe for backhoe trenching. The pipe will be installed under roads and canals by method of jack-and-bore. In this method, pits are dug on each side of the road (or canal) and a ram is placed in one pit to punch a steel casing pipe underneath. Once the steel casing is received on the other side, the operational pipe is slid into the casing and connected on each side. A two (2) foot thick concrete cap will be placed on top of said piping which is located within any unpaved portions of the Public Right-of-Way. All pipeline installation activities will be designed subject to the approval by the Kings County Public Works Department.

The Area of Potential Effect (APE) will contain all construction, staging, and lay-down areas for the Project, and is constrained by property ownership boundaries. The APE consists of the pipe corridor, which runs parallel to existing asphalt and dirt roads for approximately 7.3-mi, and the construction of a biogas upgrading facility. Because the exact route of the pipeline had not been established, both sides of the existing roads were considered within the APE. In total, the proposed horizontal project APE will comprise approximately 100-ac of both developed and undeveloped land. The vertical APE is the depth of maximum ground surface disturbance/grading for pipe trenching, and is set at 10-ft.

1.3 REGULATORY CONTEXT

1.3.1 NHPA

The NHPA of 1966, as amended (54 USC § 300101 *et seq.*), is the primary federal legislation that outlines the federal government’s responsibility to consider the effects of its actions on historic properties. Section 106 of the NHPA (54 USC § 300108) and its implementing regulations at 36 CFR Part 800 describes the process that a federal agency shall take to identify cultural resources and assess the level of effect that a proposed undertaking will have on historic properties. An undertaking is defined as a “...project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a federal agency.” This includes projects that are carried out by,

or on behalf of, the agency; those carried out with federal assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a federal agency. Other applicable federal cultural resources laws and regulations that could apply to undertakings include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA).

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Those cultural resources that are listed on, or are eligible for inclusion in, the National Register of Historic Places (NRHP) are considered as “historic properties.” The criteria for NRHP eligibility are defined at 36 CFR § 60.4 as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- (a) are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) are associated with the lives of persons significant in our past; or
- (c) 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
- (d) have yielded or may be likely to yield, information important in prehistory or history.

A cultural resource must have integrity and meet one of the above four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in history or pre-contact history in order to be considered for listing under Criterion A. Additionally, the specific association of the property itself must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to the history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties that have the potential to answer, in whole or in part, important research questions about human history that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to the pre-contact history and history (*National Register Bulletin* 15).

A district, site, building, structure, or object may also be eligible for consideration as a historic property if that property meets the criteria considerations for properties generally less than 50 years old, in addition to possessing integrity and meeting the criteria for evaluation.

There are, however, restrictions on the kinds of historical properties that can be NRHP listed. These have been identified by the Advisory Council on Historic Preservation (ACHP), as follows:

Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- (b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.
- (d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- (e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- (f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- (g) A property achieving significance within the past 50 years if it is of exceptional importance [<http://www.achp.gov/nrcriteria.html>].

1.3.2 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when “historically significant” or “unique” cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

- (A) Are associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- (B) Are associated with the lives of persons important in our past;
- (C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
- (D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

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 (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.



Figure 1. Regional Location of Biogas Project Study Area, Kings County, California.

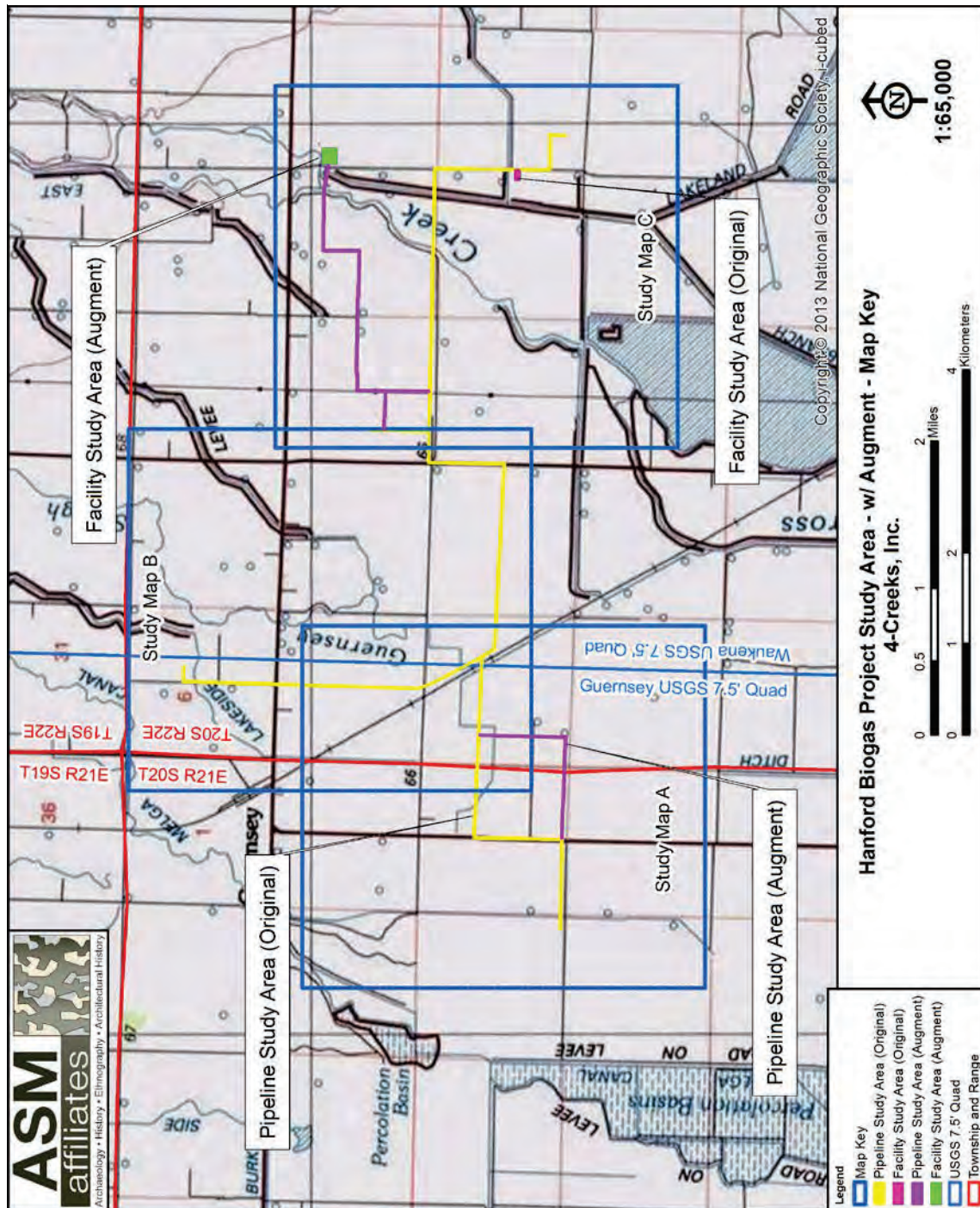


Figure 2. Location of Biogas Project Study Area, Map Key, Kings County, California.

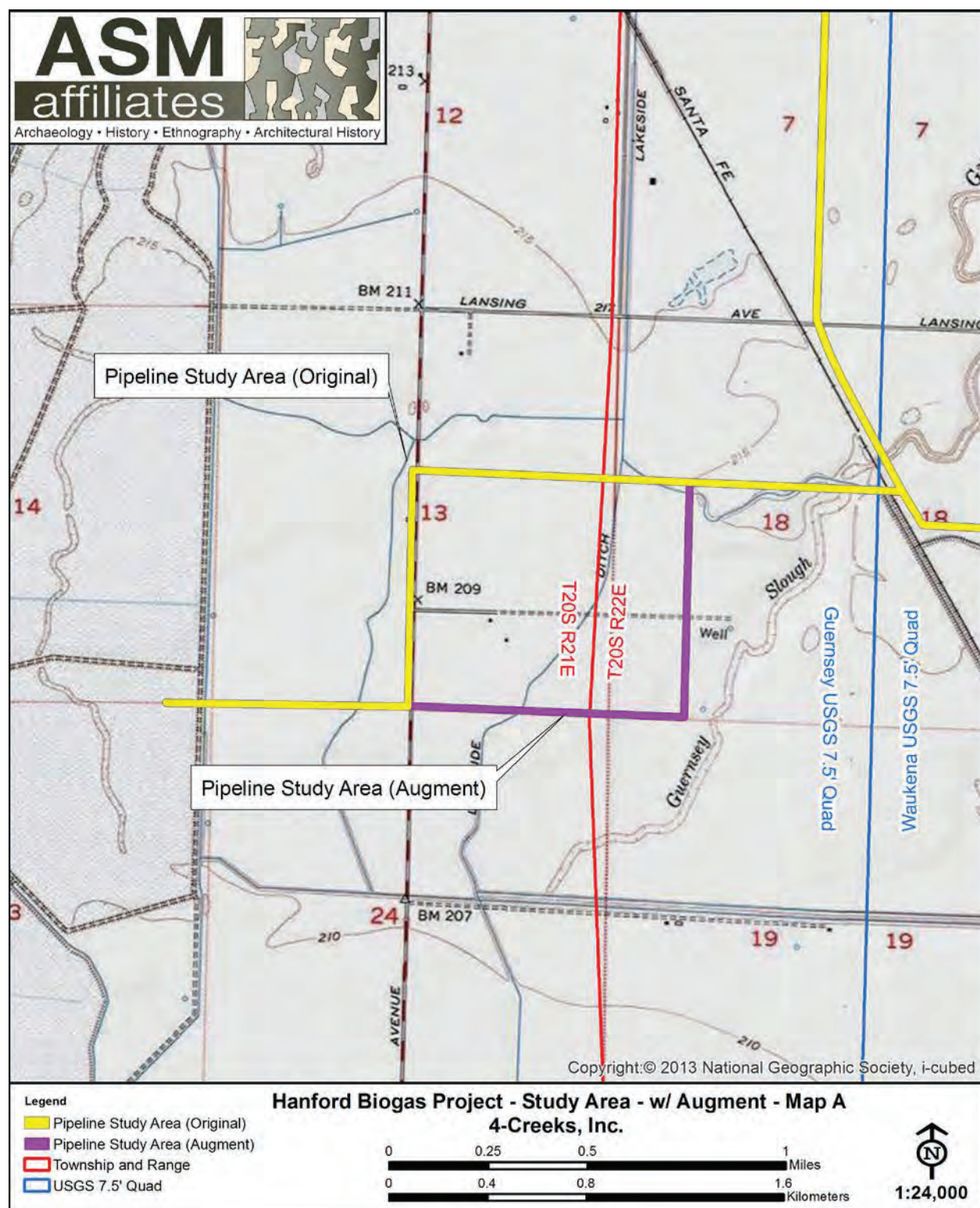


Figure 3. Location of Biogas Project APE, Map A, Kings County, California.

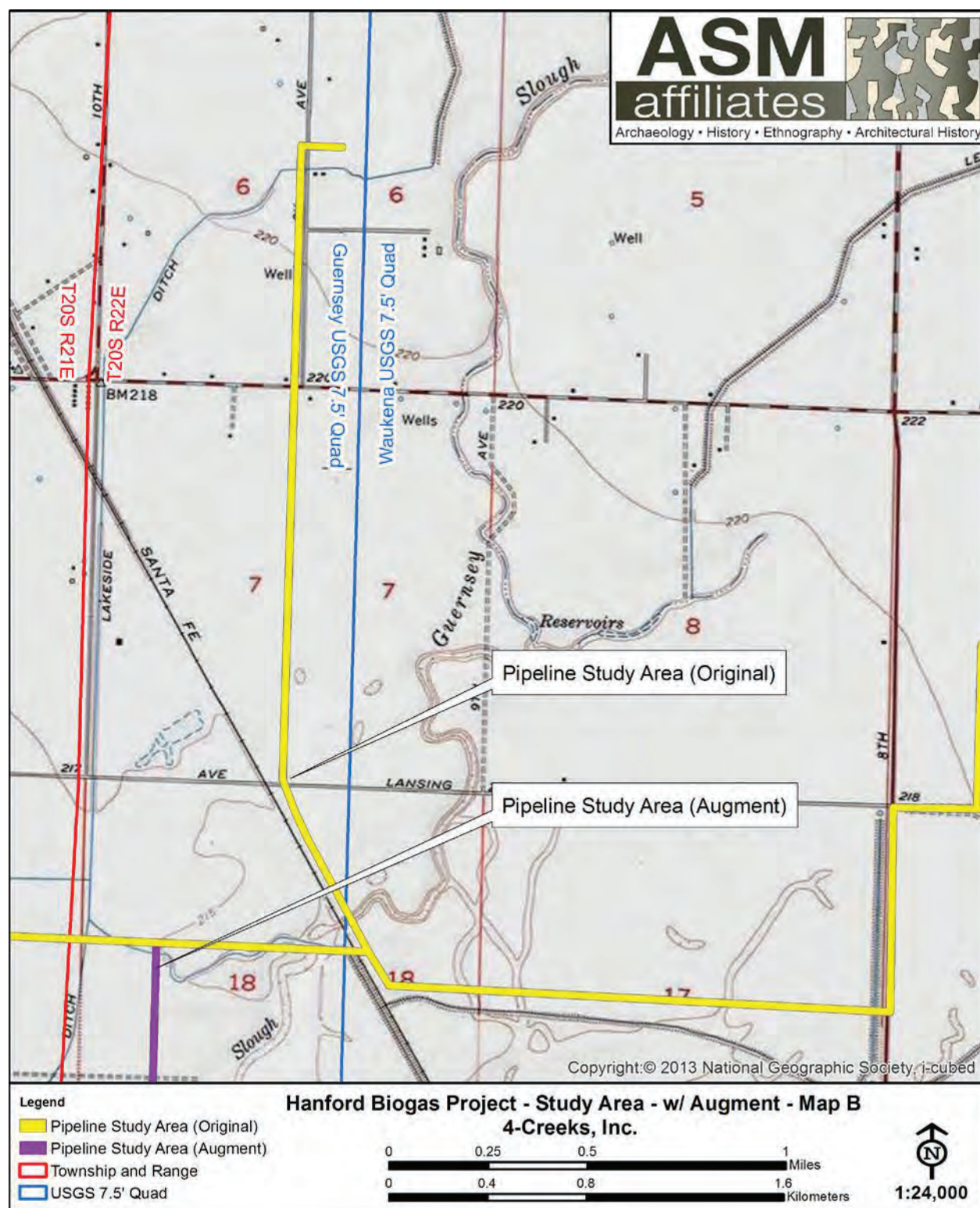


Figure 4. Location of Biogas Project APE, Map B, Kings County, California.

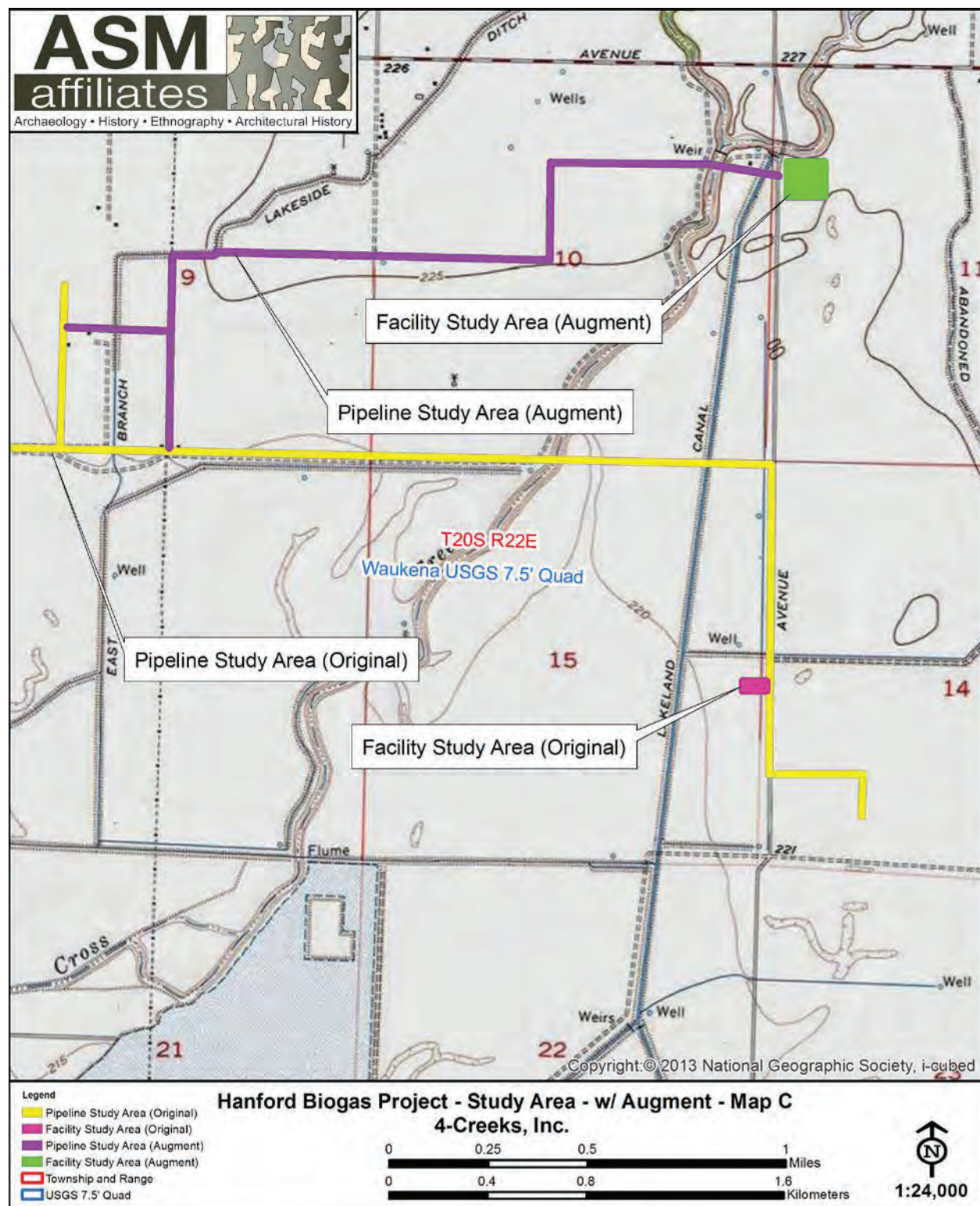


Figure 5. Location of Biogas Project APE, Map C, Kings County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the study area is located at elevations between 195-ft amsl to 220-ft amsl on the open flats of the San Joaquin Valley, and approximately 8-mi south of City of Hanford. The study area is situated north of the North Fork of the Kings River. The Kings River is perennial and splits into the North and South fork distributaries approximately six miles north of the City of Lemoore, eventually draining into the now dry Tulare Lake bed, which lies to the south of the Project APE.

Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been prairie grasslands, grading into tree savannas in the foothills to the east (Preston 1981). Historically, and likely prehistorically, riparian environments would have been present along the drainages, waterways and marshes. The APE and immediate surroundings have been farmed and grazed for many years and no native vegetation is present. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study area prior to cultivation.

The study area falls on the Kings River Fan. According to the geoarchaeological model developed by Meyer et al. (2010), the study area has a very high to moderate potential for buried archaeological deposits. Buried sites and cultural resources therefore potentially may be present within the Project APE.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Latta (1977) places the north shore of Tulare Lake east of Fish Slough in Nutúnutu territory, with the closest village being *Wiu* nearer the Mussel Slough inlet. Kroeber (1925:484), however, indicates that Nutúnutu territory did not include the north shore of Tulare Lake, but that the north shore, including Fish Slough, was Tachi territory. The village of *Wiu* (*Wiau* in Kroeber [1925]) remains near the inlet of Cottonwood Creek and Mussel Slough. Regardless of tribal affiliation, historical village distribution was similar across the region. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps,

often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts peoples currently live at or are associated with the Santa Rosa Rancheria, near Lemoore, west of the project area. This was created for the federally-recognized Tachi Yokut Tribe in 1934. The Rancheria currently includes approximately 1800 acres and has a resident population of about 650 individuals.

2.3 ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's pre-contact history is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general pre-contact history of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake south of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests a much more substantial population and settlements which, instead of relying on big game hunting, were tied to

the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation of California first occurs during the middle Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time. Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period known climatically as the Holocene Maximum (circa 3800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. Archaeologically, it was marked by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmill culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise it appears the so-called "Shoshonean Wedge" in southern California or the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at this time, rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al n.d). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W & S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W & S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W & S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W & S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments

exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W & S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California. This corresponds to the so-called Medieval Climatic Anomaly, a period of climatic instability that included major droughts and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is also believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages. What is clear is that Middle Period villages and settlements were widely dispersed across the landscape; many at locations that lack contemporary evidence of fresh water sources. Late Horizon sites, in contrast, are typically located where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located near the Santa Rosa Rancheria, west of the study area. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The subsequent Late Horizon can be best understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California, suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley pre-contact history relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the Carrizo Plain, immediately west of the southern San Joaquin Valley demonstrates (Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the pre-contact historic demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the southern end of the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of state wide ‘No-Fence’ laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. Reclaiming swampy lands was a major aspect of the increase in farming, with grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring such a grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad (SPRR) reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

In 1877, what is now Kings County received its first SPRR stop in what would become the town of Hanford. This was named after James Madison Hanford, a rail executive, at what was originally a sheep camp. The rail-stop, with the SPRR tracks running east-west, quickly developed into a small community. A post office opened in 1887. That same year also marked the opening of Hanford's and Kings County's oldest business, the Lacey Milling Company. This was established by Horatio G. Lacey at the corner of West Fifth and Ridington Streets, across the street from the original SPRR sidings, and thus at an important local trans-shipment point. The mill originally processed locally-grown wheat and other grains for flour and livestock feed. It transitioned over the decades so that, in 2016, it is now primarily producing flour for tortillas. It is still family owned and operated (http://hanfordsentinel.com/news/local/lacey-milling-co-grinding-flour-since/article_39b56540-44cd-11df-a053-001cc4c03286.html).

Due to a series of fires and the resulting need for fire protection, Hanford was incorporated in 1891. That same year H.G. Lacey built the first electrical generating plant in Hanford, providing electrical lights for the growing town. It was made the county seat when Kings County was separated from Tulare County in 1893. The town's regional significance was emphasized a few years later, in 1897, when the Atchison, Topeka and Santa Fe rail company (now Burlington Northern and the Santa Fe) routed a second rail line north-south through Hanford.

The San Joaquin Valley in general was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift in the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in local towns where their descendants live today (Boyd 1997). Hanford developed during the twentieth century as a governmental, market and services town closely tied to the agricultural development of the San Joaquin Valley.

The Biogas Cluster Project APE lies outside of Hanford and other small farming communities in this portion of Kings County. This area was most likely developed for agricultural purposes in the 1860s – 1870s. The Lakeside Ditch Company, organized in 1873, constructed the Lakeside Ditch in 1874 for \$35,000. This was originally 30-ft wide and 3-ft deep. It diverted water from Cross Creek, a branch of the Kaweah River, to the southwest into the Guernsey and thus Project area, making irrigated agriculture possible (Grunsky 1898:18-19). This ditch remained the major source of Kaweah River water in Kings County until the 1930s. Subsequently an East Branch and smaller laterals were added. It was re-aligned after 1954 and has had a number of contemporary/modern features added. The Highline Canal was constructed in 1938. It draws water from the East Branch of Cross Creek. It was upgraded and improved in circa 1960. The Lakeland Irrigation District was formed by the Kings County Board of Supervisors in 1923. The Lakeland Canal was constructed between 1923 and 1928. The district incorporated 23,283-ac of land, 23,000-ac of which was deemed irrigable. In 1933, it served 24 farms, irrigating 8,000-ac (Hyatt 1934). The Lakeland Irrigation District was dissolved by 2005 and incorporated into the Lakeside Irrigation District.

2.5 RESEARCH DESIGN

2.5.1 Pre-Contact Archaeology

Previous research and the nature of the pre-contact archaeological record suggest two significant NRHP themes, both of which fall under the general Pre-Contact Archaeology area of significance. These are the Expansion of Pre-Contact Populations and Their Adaptation to New Environments; and Adaptation to Changing Environmental Conditions.

The Expansion of Pre-Contact Populations and Their Adaptation to New Environments theme primarily concerns the Middle Horizon/Holocene Maximum. Its period of significance runs from about 4,000 to 1,500 YBP. It involves a period during which the population appears to have expanded into a variety of new regions, developing new adaptive strategies in the process.

The Adaptation to Changing Environmental Conditions theme is partly related to the Holocene Maximum, but especially to the Medieval Climatic Anomaly. The period of significance for this theme, accordingly, extends from about 4,000 to 800 YBP. This theme involves the apparent collapse of many inland populations, presumably with population movements to better environments such as the coast. It is not yet known whether the southern San Joaquin Valley, with its system of lakes, sloughs and swamps, experienced population decline or, more likely, population increase due to the relatively favorable conditions of this region during this period of environmental stress.

The range of site types that are present in this region include:

- Villages, primarily located on or near permanent water sources, occupied by large groups during the winter aggregation season;
- Seasonal camps, again typically located at water sources, occupied during other parts of the year tied to locally and seasonally available food sources;
- Special activity areas, especially plant processing locations containing bedrock mortars (BRMs), commonly (though not exclusively) near existing oak woodlands, and invariably at bedrock outcrops or exposed boulders;
- Stone quarries and tool workshops, occurring in two general contexts: at or below naturally occurring chert exposures on the eastern front of the Temblor Range; and at quartzite cobble exposures, often on hills or ridges;
- Ritual sites, most commonly pictographs (rock art) found at rockshelters or large exposed boulders, and cemeteries, both commonly associated with villages; and
- A variety of small lithic scatters (low density surface scatters of stone tools).

The first requisites in any research design are the definition of site age/chronology and site function. The ability to determine either of these basic kinds of information may vary between survey and test excavation projects, and due to the nature of the sites themselves. BRM sites without associated artifacts, for example, may not be datable beyond the assumption that they post-date the Early Horizon and are thus less than roughly 4000 years old.

A second fundamental issue involves the place of site in the settlement system, especially with respect to water sources. Because the locations of the water sources have sometimes changed over time, villages and camps are not exclusively associated with existing (or known historical) water sources (W&S Consultants 2006). The size and locations of the region's lakes, sloughs and stream channels, to cite the most obvious example, changed significantly during the last 12,000 years due to major paleoclimatic shifts. This altered the area's hydrology and thus prehistoric settlement patterns. The western shoreline of the Tulare Lake was relatively stable, because it abutted Dudley Ridge and the Kettleman Hills, to the west. But the northern, southern and eastern shorelines comprised the near-flat valley floor. Relatively minor fluctuations up or down in the lake level resulted in very significant changes in the areal expression of the lake on these three sides, and therefore the locations of villages and camps. Although perhaps not as systematic, similar changes occurred with respect to stream channels and sloughs, and potential site locations associated with them. This circumstance has implications for predicting site locations and archaeological sensitivity. Site sensitivity is hardest to predict in the open valley floor, especially near the northern, southern and eastern shorelines of Tulare Lake, due to fluctuating surface water levels.

Nonetheless, the position of southern San Joaquin Valley pre-contact history relative to the changing settlement and demographic patterns seen in surrounding areas is still somewhat unknown (cf. Siefkin 1999), including to the two NRHP themes identified above. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the effects of desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the pre-contact historic demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Pre-contact archaeological sites may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. Sites may also be eligible under Criterion A, association with events contributing to broad patterns of history. Cemeteries, mortuary remains and artifacts with ceremonial/religious significance may be protected under NAGPRA.

2.5.2 Historical Archaeology: Native American

Less research has been conducted on the regional historical archaeological record, both Native American and Euro-American. For Native American historical sites, the ethnographic and ethnohistoric periods in the southern San Joaquin Valley extended from first Euro-American contact, in AD 1772, to circa 1900, when tribal populations were first consolidated on reservations. The major significant historic NRHP themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley "horse culture," including raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases

(especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); the origins of the reservation system, and the development of new tribal organizations and ethnic identities; and, ultimately, the adoption of the Euro-American society's economic system and subsistence practices, and acculturation into that society.

Site types that have been identified in the region dating to the ethnographic/ethnohistoric period of significance primarily include villages and habitations, some of which contain cemeteries and rock art (including pictographs and cupules). Dispersed farmsteads, dating specifically from the reservation period or post-1853, would also be expected. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization (from traditional nucleated villages to single family dispersed farmsteads); the breakdown of traditional trading networks with their replacement by new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education.

For Criteria A, C and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criteria C and A. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.5.3 Historical Archaeology: Euro-American

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Because of the potential variety of historical remains that could occur in any area, Caltrans has identified a series of general research issues along with an evaluation matrix aiding determinations of eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); agricultural technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

1. *Association* refers to the ability to link an assemblage of artifacts, ecofacts, and other cultural remains with an individual household, an ethnic or socioeconomic group, or a specific activity or property use.
2. *Integrity* addresses the physical condition of the deposit, referring to the intact nature of the archaeological remains. In order for a feature to be most useful, it should be in much the same state as when it was deposited. However, even disturbed deposits can yield important information (e.g., a tightly dated deposit with an unequivocal association).
3. *Materials* refers to the number and variety of artifacts present. Large assemblages provide more secure interpretations as there are more datable items to determine when the deposit was made, and the collection will be more representative of the household, or activity. Likewise, the interpretive potential of a deposit is generally increased with the diversity of its contents, although the lack of diversity in certain assemblages also may signal important behavioral or consumer patterns.
4. *Stratigraphy* refers to the vertically or horizontally discrete depositional units that are distinguishable. Remains from an archaeological feature with a complex stratigraphic sequence representative of several events over time can have the added advantage of providing an independent chronological check on artifact diagnosis and the interpretation of the sequence of environmental or sociocultural events.
5. *Rarity* refers to remains linked to household types or activities that are uncommon. Because they are scarce, they may have importance even in cases where they otherwise fail to meet other thresholds of importance (Caltrans 2007:209).

In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. Given the location of the current Project area, within downtown Hanford adjacent to the railroad tracks, the most likely historical remains that might be present would relate to the early economic growth of this town.

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3. ARCHIVAL RECORDS SEARCH

An archival records search was conducted at the California State University, Bakersfield, Southern San Joaquin Valley Archaeological Information Center (IC), by IC staff members to determine: (i) if prehistoric or historical archaeological sites or structures had previously been recorded within the study area; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. The results of this archival records search are summarized here; the records search is included in Confidential Appendix A.

According to the IC records search, three previous archaeological surveys had been completed that covered small portions the APE (Table 1; see attached maps). These included two linear surveys that bisect the APE on the west and approximate center, and one block study bordering the eastern APE. Three cultural resources were recorded within the study area as a result of these studies (Table 2). These sites consist of two historic era ditches/canals (P-16-000086, P-16-000253) and the historic era Burlington Northern and Santa Fe Railway (P-16-000120).

No additional previous archaeological surveys had been conducted within 0.5 mi of the Project APE; however, two cultural resources are known to exist within that 0.5-mile radius (Table 3). These resources consist of another historic era canal (P-15-000251) and prehistoric human remains (P-15-000017). A map of previous reports and recorded cultural resources in and around the study area is presented in Confidential Appendix A.

Table 1. Survey Reports Within the Study Area.

| Report No. | Year | Author (s)/Affiliation | Title |
|------------|------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| KI-00094 | 2000 | WJ Nelson/ Far Western Anthropological Research Group, Inc. | Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project Segment WS04: Sacramento to Bakersfield |
| KI-00171 | 2003 | SM Hudlow/ Hudlow Cultural Resource Associates | A Phase I Cultural Resource Survey For a Calf Nursery/Grow Yard, Grimmus Cattle Company, Kings County, California |
| KI-00218 | 2012 | MP Patrick/ Far Western Anthropological Research Group, Inc. | Cultural Resource Identification Efforts for the Solar PV 250 MW Program – Guernsey Substation - Cloverdale Parcel |

Table 2. Resources within the Study Area.

| Primary # | Type | Description |
|-------------|-----------|------------------------------------------|
| P-16-000086 | Structure | “Lakeside Ditch”; Irrigation Canal |
| P-16-000120 | Structure | Burlington Northern and Santa Fe Railway |
| P-16-000253 | Structure | “Highline Canal”; Irrigation Canal |

Table 3. Resources within 0.5 miles of the Study Area.

| Primary # | Type | Description |
|------------------|-------------|---------------------------------|
| P-16-000017 | Site | Burial site |
| P-16-000251 | Structure | “Melga Canal”; Irrigation Canal |

A records search was also conducted at the Native American Heritage Commission (NAHC) Sacred Lands File (Confidential Appendix A). No sacred sites or tribal cultural resources were known in or in the vicinity of the APE, with the exception of the burial site, noted above, within a 0.5-mi radius. Outreach letters were then sent to the tribal contact list provided by the NAHC, with subsequent follow-up calls. The Santa Rosa Rancheria Tachi-Yokut Tribe responded to tribal outreach by email, expressing concern about the Project and requesting that a tribal monitor be present during Project construction.

Based on the records search and study, the Project APE appears to have Native American/pre-contact archaeological sensitivity.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventor/Phase I survey of the Biogas Project study area was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A., with assistance in the field from ASM Assistant Archaeologists Stacey Escamilla B.A., Tim Polkinghorne, B.A., and Jennifer Heffler, B.A. The initial survey was completed on April 19th and 21st, 2019, covering an original 9.4-mi of proposed pipeline route and facility study area. A revised/augmented study area, measuring approximately 3.5-mi, was surveyed on September 10, 2019. The final APE/pipeline route, which incorporates parts of the original survey area and the entirety of the revised/augmented study area, will be approximately 7.3-mi long with a biogas upgrading facility that is 7.4-acres (ac) in size. A total study area of 142-ac was surveyed, combining the original and revised/augmented study areas.

The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms.

The entirety of the approximately 142-ac Project study area was intensively surveyed. Because the final location of the pipeline route had not been established, both sides of the pipeline route along roads were surveyed, using a 15-m transect along each side. The proposed upgrading facility was also covered with parallel 15-m transects.

4.2 SURVEY RESULTS

The Project study area is within agricultural fields (Figures 6) and is bisected by both dirt and asphalt roads (Figure 7) and multiple existing irrigation ditches. Vegetation within the study area consisted mostly of intrusive weeds (i.e. fiddleneck, horseweed, prickly lettuce); however, a low-density mix of salt bush scrub was noted along the perimeter of the study area to the east. Ground surface visibility was excellent along the western stretch of the proposed pipeline and moderate within the boundaries of the proposed Biogas Upgrading Facility. Special attention was paid to any exposed ground surface areas with better ground surface visibility within the facility area, and survey spacing was reduced in areas of poor visibility to 5-m.

Segments of three previously recorded resources were identified and recorded within the Project study area: Lakeside Ditch (P-16-000086/CA-KIN-114H; Figure 8), Burlington Northern and Santa Fe Railway (P-16-000120; Figure 9), and the Highline Canal (P-16-000253/CA-KIN-104H; Figure 10). A segment of a newly recorded resource, the Lakeland Canal (Figure 11) was also

documented within the study area. The Lakeside Ditch, Highline Canal, and Lakeland Canal are components of historic water conveyance systems. DPR site form updates with location map and GIS sketch maps for each of the resources are available in Confidential Appendix B.

No other cultural resources of any kind were identified during the survey.



Figure 6. Overview of west end of proposed pipe corridor, looking east.



Figure 7. Overview of proposed pipe corridor near the intersection of Hwy. 43 and Lansing Ave., looking southwest.



Figure 8. Overview of the Lakeside Ditch (P-16-000086/CA-KIN-114H), looking east.



Figure 9. Overview of the Burlington Northern and Santa Fe Railway (P-16-000120), looking northwest.



Figure 10. Overview of the Highline Canal (P-16-000253/CA-KIN-104H), looking southeast.



Figure 11. Overview of Lakeland Canal, looking south.

4.2.1 Previously Recorded Resources

P-16-000086/CA-KIN-114H (Lakeside Ditch)

Site P-16-000086, consisting of five segments (Segments A - E) of the late 19th century Lakeside Ditch, are located less than 1-mi northeast and 2-mi southeast of the unincorporated community of Guernsey. Segment A measures approximately 40-ft (north-south) by 100-ft (east-west). Segment B measures approximately 100-ft (north-south) by 360-ft (east-west). Segment A measures approximately 40-ft (north-south) by 100-ft (east-west). Segment B measures approximately 100-ft (north-south) by 360-ft (east-west). Segments C, D, and E each measure approximately 100-ft (north-south) by 100-ft (east-west). The segments are situated at an elevation between of 192-ft and 207-ft amsl. The investigated segments of the Lakeside Ditch are good condition.

Site P-16-000086 was initially recorded by URS in 2000 and updated later updated by CRM TECH (2001), JRP Historical Consulting (2009), and Applied Earthworks (2009). The resource consists of multiple segment of the Lakeside Ditch. Based on historic Guernsey 7.5' and Waukena 7.5' USGS quadrangles and historic aerials, the alignment of the Lakeside Ditch in the project area have been modified multiple times. Previously destroyed sections of the ditch abutted the current project APE; however, only those sections where the ditch still exists, and where it bisects the project APE, were recorded.

Segment A is comprised of earthen sidewalls and a small concrete culvert crossing on either side of 9 ½ Ave. A date inscribed on the western culvert reads "2016." Segment B is comprised of two

bifurcated stretches of the ditch bisected by the BNSF rail grade (P-16-000120). This segment is also of earthen sidewall construction and contains only one visible slide gate on the west side of the railroad. Segment C is comprised of earthen sidewall construction with no visible irrigation features. Segment D is comprised of earthen sidewalls and a small concrete diversion structure and slide gate. Segment E consists of earthen sidewall construction with one concrete diversion structure – embossed with “CENTRAL VALLEY RANCH, DEC. 1973” - and slide gate. Aside from the “1973” diversion structure at Segment E, the associated features of the other recorded segments (A, B, C and D) of Lakeside Ditch (i.e. culverts, gates, valves) are modern in age, and it is not known when these components were updated. As last noted by Applied Earthworks in 2009, the associated features of the recorded segments (e.g., culverts, gates, valves) are modern in age, and it is not known when these components were updated.

Segments of the Lakeside Ditch recorded by Three Girls and a Shovel (2006), URS (2000) and Applied Earthworks (2009) have been recommended as not NRHP/CRHR eligible due to lack of integrity of location, design, setting, feel and association. We concur with those earlier recommendations concerning this cultural resource.

Due to severe alterations over time and corresponding loss of integrity, the Lakeside Ditch Segments A through E are recommended as not eligible for the NRHP or CRHR under Criteria A/1, B/2, C/3 or D/4. The Lakeside Ditch does not appear to be a historical resource for the purposes of CEQA. The Lakeside Ditch does not comprise a significant or unique historical resource under CEQA.

P-16-000120 (Burlington Northern and Santa Fe Railway)

The resource, a short segment of the Burlington Northern and Santa Fe Railway, is located less than 2-mi southeast of the unincorporated community of Guernsey, CA. The recorded segment measures approximately 100-ft (northwest-southeast) by 60-ft (east-west) by 6-ft in height. It is situated at an elevation of 196-ft amsl. This segment of the Burlington Northern and Santa Fe Railway is good condition. This railway, originally called the Atchison, Topeka and Santa Fe Railroad, was completed in 1895 – 1896.

The Burlington Northern and Santa Fe Railway was evaluated for NRHP nomination by CRM TECH in 2001. It was recommended not NRHP/CRHR eligible due to lack of integrity. We concur with that 2001 recommendation.

The rail grade segment within the Project APE has not changed since last described in 2001. All observed components of the rail grade appear modern in age and consist of the rails, ties and ballast only. According to historic aerials, historic topographic quadrangles, and Google Earth, this segment of the Burlington Northern and Santa Fe Railway follows the original rail alignment.

In concurrence with the 2001 evaluation, we recommend this resource as not NRHP or CRHR eligible, due to lack of integrity of materials and setting. It therefore does not constitute a significant or unique resource under CEQA.

P-16-000253/CA-KIN-104H (Highline Canal)

Site P-16-000253, consisting of a segment of the mid-20th century Highline Canal, is located less than 5-mi from census-designated place of Waukena, California. The in-use section (east-west trending) of the canal measures approximately 100-ft (north-south) by 715-ft (east-west) by approx. 8-ft deep. It is situated at an elevation of 203-ft amsl. This segment of the Highline Canal is fair condition.

The resource is a small segment of the Highline Canal that dates to the mid-20th century. Other segments of the Highline Canal were initially recorded by the Department of Transportation in 1998 and revisited by JRP Historical Consulting in 2009. The canal was determined not NRHP/CRHR eligible by Caltrans based on its lack of significance.

The recorded segment bisects the current Project APE where 6th Ave intersects with the canal. The investigated section of the canal is of earthen sidewall construction and includes a concrete road crossing (Feature 1) with no diagnostic elements. According to historic aerials, historic topographic quadrangles, and Google Earth, this segment of the Highline Canal was constructed between 1950 and 1957.

We concur with the previous Caltrans determination that the Highline Canal does not appear to be eligible for the NRHP/CRHR under Criteria A/1, B/2, C/3 or D/4. The Highline Canal does not comprise a significant or unique historical resource under CEQA.

4.2.2 Newly Recorded Resource

Lakeland Canal

One segment of the Lakeland Canal was recorded during the survey. It is located approximately 9-mi southeast of Hanford and 4-mi east of the unincorporated community of Guernsey. The recorded segment measures approximately 180-ft (northwest-southeast) by 100-ft (northeast-southwest) by 5-ft deep, and is situated at an elevation of 202-ft amsl. The ditch is earthen-sided with a U-shaped bottom profile. Broken concrete slabs (old irrigation pipes) have been dumped in various places along the side of the ditch, presumably for erosion control. The investigated segments of the Lakeland Canal are in good condition.

The Lakeland Canal is variously called the “Lakelands Unit No. 2,” the “Lake Land Canal,” and the “Lakeland Ditch” in the existing but very limited historical records. The origins of the canal—more appropriately, a ditch—extend back to 1903 when the Lake Land Canal and Irrigation Company proposed creating the canal using two 40-hp boilers and a dredge, initially planning to obtain water from the Kings River (*Pacific Rural Press*, 1903, p. 326). Litigation apparently prevented the project from moving forward (Menefee and Dodge 1916). According to the *Engineering News-Record* (Volume 75, 1916), the company was still proposing the excavation of the ditch in 1916, in this case claiming that it would be 5-mi long. The ditch had not been constructed by 1923, when the Kings County Board of Supervisors created the Lakeland Irrigation District (Hyatt 1934). The ditch was then excavated sometime between 1923 and 1928, when it is first depicted on the USGS Waukena quadrangle, taking water from Cross Creek rather than the

Kings River. The irrigation district covered 23,383-acres, of which 23,000 were said to be irrigable, though it only served 24 farms and irrigated 8,000-ac. No bond was recorded for the ditch construction during this period, however, suggesting that it was fully-funded by the district members. The Lakeland Irrigation District was dissolved by 2005. Historical air photos indicate that, at various points, the ditch appeared to have been abandoned although it currently appears to be in use seasonally, drawing water from Cross Creek, as a component of the Lakeside Irrigation and Water District.

The Lakeland Canal follows its original course and still maintains its original earthen-sided construction design. Its setting has changed, however, with the addition of concrete road and steel pipe crossings, adjacent far outbuildings, metal pipes and concrete-cast irrigation water control features. It thus lacks integrity of setting and materials. This is a common property type; it is not unusually representative of a specific property type or construction technique; it has no research potential; and it is not associated with a significant historical figure. It is therefore recommended as not NRHP or CRHR eligible under Criteria A/1, B/2, C/3 or D/4, and is not a significant or unique historical resource under CEQA.

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III archaeological inventory/Phase I survey was conducted for the Biogas Cluster Project, Kings County, California. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. This indicated that the study area had been partially surveyed and that three historic cultural resources were known to exist within it (segments of the Lakeside Ditch, the Burlington Northern and Santa Fe Railway, and the Highline Canal). A records search of the NAHC Sacred Lands Files was also conducted and contacts with designated tribal organizations were also completed. No tribal cultural resources or sacred sites have been identified within the Project APE, though a burial site was identified within a 0.5-mi radius of the Project study area. The Santa Rosa Rancheria Tachi Yokuts, however, expressed concern about the Project and requested that a tribal monitor be present during grading.

The survey was conducted in two phases. An initial survey was completed on April 19th and 21st, covering an original 9.4-mi of proposed pipeline route and facility study area. A revised/augmented study area, measuring approximately 3.5-mi, was surveyed on September 10, 2019. The final APE/pipeline route, which incorporates parts of the original survey area and the entirety of the revised/augmented study area, will be approximately 7.3-mi long with a biogas upgrading facility that is 7.4-acres (ac) in size. A total study area of 142-ac was surveyed, combining the original and revised/augmented study areas.

The segments of P-16-000086/CA-KIN-114H, the Lakeside Ditch, P-16-000120, the Burlington Northern and Santa Fe Railway, and P-16-000253/CA-KIN-104H, a small section of the Highline Canal, were recorded and evaluated within the Project study area. Each of these three cultural resources had been previously recorded and evaluated, and each had been recommended as not NRHP/CRHR eligible due to lack of integrity and/or significance. We concur with those previous recommendations. A newly identified resource, the Lakeland Canal, was also identified and recorded during the study. This resource, dating from the 1920s, is a common property type that is not associated with a known important historical figure, has no research potential, and lacks integrity of setting and material. It is recommended as not NRHP/CRHR eligible.

5.1 RECOMMENDATIONS

An intensive Phase I survey/Class III inventory demonstrated that the Biogas Cluster Project APE lacks significant archaeological and historical resources. The proposed Project therefore does not have the potential to result in adverse impacts or effects to known significant historical resources or historic properties. Based on the request by the Santa Rosa Rancheria Tachi Yokuts, the presence of a tribal monitor is however recommended during Project construction. In the unlikely event that cultural resources are encountered during Project construction or use, it is also recommended that an archaeologist be contacted to assess the discovery.

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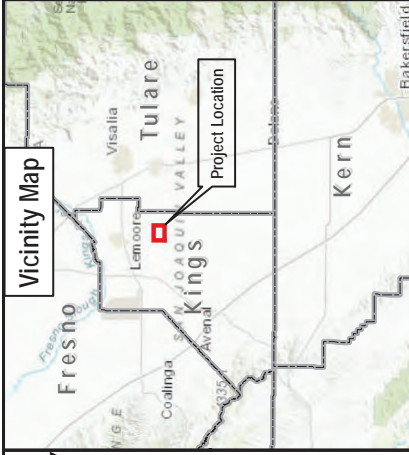
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CONFIDENTIAL APPENDICES

Appendix D

Pipeline Alignment Map

CALIFORNIA BIOENERGY Hanford Cluster Phase 1



Legend

Dairies
 Cal Bio Participant - 2017 CDFA Grant Awarded
 Counties
 Parcels

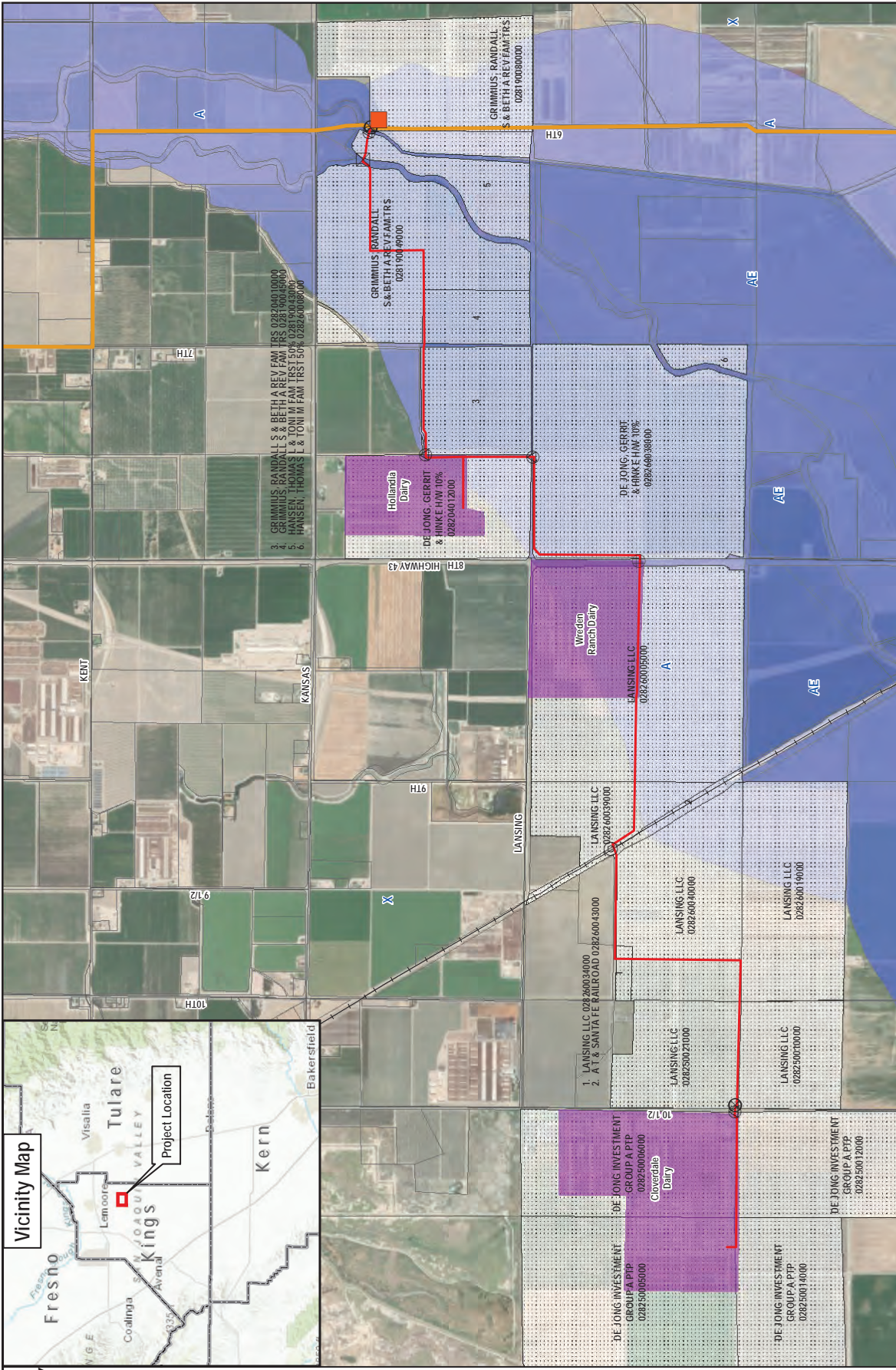
Flood Zones
 0.2 PCT ANNUAL CHANCE FLOOD
 HAZARD
 A
 AE
 AH

Biogas Collection Pipeline
 Phase 1
 Social Gas > 60psi line
 Social Gas Pipeline
 Railroads
 Roads

Cal Trans Encroachment Permit (1)
 County Encroachment Permit (2)
 DFW 1602 Permit (1)
 Private Ditch Crossing (4)
 Rail Road Encroachment (1)
 Biogas Upgrading Facility & POR



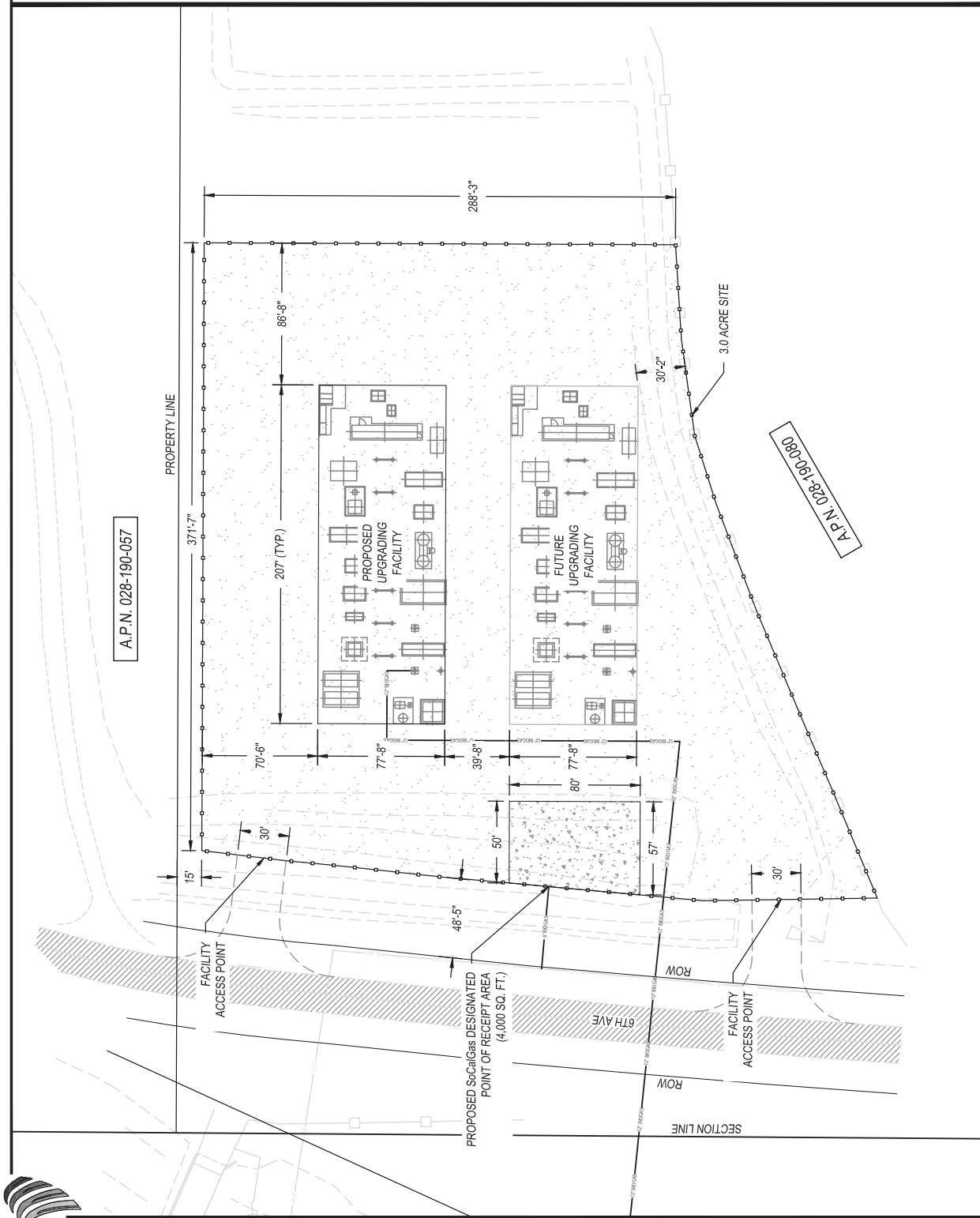
1 in = 0.44 mile



- Notes:**
- 1) The biogas collection line will be buried with 6' feet of cover.
 - 2) The biogas collection line material will be PE4710 grade HDPE.
 - 3) The maximum allowable pressure will be 100 psig.
 - 4) The operating pressure will be approximately 75 psig at the dairies falling to 10 psig at the upgrading plant inlet at maximum rates during the summer.
 - 5) The operating pressure will be approximately 30 psig at the dairies falling to 10 psig at the upgrading plant inlet at minimum rates during the winter.
 - 6) The pre-processed biogas will enter the biogas collection line at each dairy at 60 deg F and may fall to 50 deg F by the time it reaches the upgrading plant inlet.

Appendix E

Upgrading Facility Site Plan

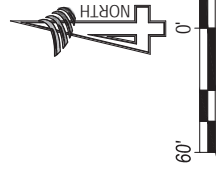


| |
|-----------------|
| JOB NO. 17343 |
| SITE PLAN |
| 11/25/2019 |
| SCALE: 1" = 60' |

**HANFORD BIOGAS CLUSTER
PROJECT
BIOGAS UPGRADING PLANT**

HANFORD, CA 93230
KINGS COUNTY
A.P.N. 028-190-080

PROPOSED SITE PLAN
HANFORD BIOGAS CLUSTER PROJECT
KINGS COUNTY, CA



LEGEND

- PROPERTY LINE
- PROPOSED FENCELINE
- PROPOSED ROAD BASE
- PROPOSED BIOGAS UPGRADING PLANT