INITIAL STUDY CHECKLIST

1. Project title:	Front Street Well Improvements Project
2. Lead agency:	Earlimart Public Utility District 396 N. Church Road #7 Earlimart, CA 93219
3. Contact person:	Dennis R. Keller, Dennis R. Keller/James H. Wegley Consulting Civil Engineers (559) 732-7938
4. Project location:	Section 4, Township 24 South, Range 25 East, MDB&M. Tulare County Assessor Parcel Number 337-060-032
5. Latitude, Longitude:	35°52'21.2" N, 119°16'16.6" W
6. General plan designation:	Public/Quasi-Public
7. Zoning:	Single Family Residential (R-1), Mixed Use Overlay Combining Zone (MU)
8. Description of project:	The Project addresses 1,2,3-TCP contamination of the Front Street Well. The Project Consists of the completion of the bidding, award, construction and start-up of a granular activated carbon (GAC) treatment system for the well.
9. Surrounding land uses and setting:	Surrounding land uses include residential, agricultural, state highway and railroad.
10. Other public agencies whose approval is required	County of Tulare State Water Resources Control Board – Division of Drinking Water

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

☐ Aesthetics	☐ Agriculture & Forestry	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities / Service Systems	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

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. An ENVIRONMENTAL IMPACT REPORT 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 required.

Dennis R Keller — 16 November, 2020

Signature — Date

Dennis R. Keller, Consulting Civil Engineer — Earlimart Public Utility District

Printed name — For

Issues:

I. AESTHETICS **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?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of (substantial) light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

a. **No Impact.** The Proposed Project does not result in a change in the scenic characteristics of the site and surrounding areas. The Proposed Project would occur on District owned land which is used for a domestic water well and hydropneumatic tank. The Proposed Project site is bounded on one side by residential land use that includes mature trees and chain link fencing with privacy slats. The well site has been in use since 1989.

b. **No Impact.** There are no scenic resources on or near the Proposed Project site. The Project is not located adjacent to or near a state scenic highway. The Proposed Project site is adjacent to State Highway 99.

c. **No Impact.** The Proposed Project would occur on District owned land which is utilized for domestic water supply purposes, including water well, discharge piping, hydropneumatic tank and electrical control panels. The Proposed Project site is surrounded by chain link fencing. Privacy slats exist along the north side of the property.

d. **Less than Significant Impact.** The Proposed Project would not create a new source of substantial light or glare. New facilities will require some additional lighting for security purposes. The new lighting will be minimized to take advantage of existing lighting and will not significantly change lighting at the site of the Proposed Project. The residence adjacent to the Proposed Project site is shielded by mature trees and chain link fencing with privacy slats.

II. AGRICULTURE & FORESTRY RESOURCES	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**

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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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 forest land to non-forest use?	☐	☐	☐	☒

Discussion

a. **No Impact.** The Proposed Project will occur on land used for existing facilities and will not remove any land from agricultural production.

b. **No Impact**. The Proposed Project site is currently zoned R1 (Residential) and MU (Mixed Use) which have general plan designations for Public/Quasi-Public land uses.

c. **No Impact**. There are no forest lands within the limits of the Proposed Project.

d. **No Impact**. There are no forest lands within the limits of the Proposed Project.

e. **No Impact**. See previous responses to Items (a) through (d).

III. AIR QUALITY

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion

The air quality impacts from the construction activities and the annual operation and maintenance activities from the operation of the Proposed Project have been evaluated using the California Emissions Estimator Model (CalEEMod). The results have been compared against thresholds established by the San Joaquin Valley Air Pollution Control District and are estimated to be below any threshold. A summary of the emissions estimates is attached for reference.

a. **No Impact.** The Proposed Project would not conflict with any applicable air quality plan. During construction, however, the District and the selected contractors would be required to comply with the San Joaquin Valley Air Pollution Control District's Regulation VIII.

b. **No Impact.** Air emissions estimates for construction and operations did not exceed any Threshold of Significance.

c. **No Impact.** Air emissions estimates for construction and operations do not indicate a significant increase for any non-attainment pollutant.

d. **No Impact.** See response to Items (a), (b) and (c).

e. **No Impact.** The adjacent areas will not be exposed to objectionable odors. The proposed facilities consist of self-contained vessels for water treatment. The Project site is located along the southwestern edge of the District. Additionally, prevailing winds move air away from the District. There are no known complaints of odor being emitted from the existing well site.

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 and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
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 U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

IV. BIOLOGICAL RESOURCES (continued)

Discussion

A Biological Evaluation Report (Report) was completed in September, 2020, that included a field survey completed in August, 2020. Identification of special status species included a search of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California. The Report has been attached for reference.

a. **No Impact.** The Report established that no special status species or suitable habitat exist within the Project area.

b. **No Impact.** The biological field survey conducted in August, 2020, did not identify any riparian habitat on the Proposed Project site. The Report established that no sensitive natural community exists within the Project area.

c. **No Impact.** The biological field survey conducted in August, 2020, did not identify any wetlands on the Proposed Project site.

d. **No Impact.** The Report did not establish that the Proposed Project would adversely affect wildlife corridors or migration. The Proposed Project does not result in features that impede movement of common wildlife found at the site and its surroundings.

   The Report recommended preconstruction surveys prior to construction during the breeding season (February 1 to August 31) and the use of construction buffers, if necessary, to mitigate impacts to nesting birds.

e. **No Impact.** The Proposed Project does not conflict with the General Plan policies of Tulare County (2012). The Proposed Project Site does not present a change in the designated land uses for the site. See response to Item (b).

f. **No Impact.** No Habitat Conservation Plan has been identified for or that includes the Project area. Since the Proposed Project does not result in any significant change to existing land use and associated conditions, i.e., tree removal, it is not expected to conflict with any local, regional or state conservation plans.

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 as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion

A Class III Inventory/Phase I Survey was completed for the Proposed Project site in October, 2020, that included a field survey, record surveys and tribal contacts. The surveys did not identify any cultural resources with the Project Area. The Management Summary of the Report is attached for reference.

a. **No Impact.** The Proposed Project site consists of a developed location for a groundwater well and actively maintained land areas. The Survey report established that the cultural resources are not present within the Proposed Project site. Consequently. construction activities would not cause any change in historical resources.

b. **No Impact.** The Proposed Project site consists of a developed location for a groundwater well and actively maintained land areas. The elements of the Proposed Project will be constructed at the well site and within the actively maintained land. The Survey report did not identify presence of any archaeological resources within or adjacent to the Proposed Project site.

c. **No Impact.** The Proposed Project site consists of a developed groundwater well and appurtenances and actively maintained site areas. The elements of the Proposed Project will be constructed at the well site and within the actively maintained land. The Survey report did not identify presence of any paleontological or geological resources within the Proposed Project site.

d. **No Impact.** The Proposed Project consists of construction activities within existing site features. The Survey report did not identify the presence of any tribal or associated resources. No response to outreach regarding Tribal consultation was received during the completion of the Survey report.

VI. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Expose people or structures to 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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?	☐	☐	☐	☒
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?	☐	☐	☐	☒

VI. GEOLOGY AND SOILS (continued)

Discussion

a. **No Impact.** The Proposed Project location is not shown in an area designated to be affected by active earthquake fault zones or landslide and liquefaction zones as reviewed utilizing the California Geological Survey Information Warehouse web-based regulatory mapping tool.

b. **No Impact.** Proposed Project includes concrete surfacing for equipment. Construction specifications for the Proposed Project will require compaction of all disturbed areas which will minimize the potential for erosion.

c. **No Impact.** See response to Item (a).

d. **No Impact.** Soil borings at the location of the Proposed Project did not indicate the presence of soil types with expansive characteristics. Soil boring information is attached for reference.

e. **No Impact.** Criteria does not apply. The Proposed Project does not include the construction of septic tanks or wastewater disposal systems.

VII. 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?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion

a. **Less than Significant Impact.** Estimates of greenhouse gases resulting from the construction activities and the annual operation and maintenance activities from the operation of the Proposed Project have been determined using the California Emissions Estimator Model (CalEEMod). The San Joaquin Valley Air Pollution Control District does not have an annual greenhouse emissions standard. The results are estimated to be below the threshold of 10,000 metric tons (MT) established by the California Air Resources Board. A summary of the emissions estimates is attached for reference.

b. **No Impact.** The Proposed Project will not conflict with any applicable plan, policy or regulation adopted for reducing the emissions of greenhouse gases. The Proposed Project does not result in significant changes in current well operations associated with greenhouse gas emissions.

VIII. 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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 for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

VIII. HAZARDS AND HAZARDOUS MATERIALS (continued)

Discussion

a. **Less than Significant Impact.** The operation of the Proposed Project will require periodic transport of chemicals used for water disinfection (liquid sodium hypochlorite) and grounds maintenance (herbicides, etc.). The quantities of such chemicals will not represent a significant hazard. The transport, use and storage of chemicals will be in accordance with regulatory requirements.

b. **Less than Significant Impact.** The operation of the Proposed Project will require chemicals used for water disinfection (liquid sodium hypochlorite) and grounds maintenance (herbicides, etc.). The quantities of such chemicals will not represent a significant hazard.

c. **No Impact.** There are no schools within one-quarter mile of the Proposed Project.

d. **No Impact.** The Proposed Project will not be constructed on a hazardous materials site. The Proposed Project site is not on the Cortese List.

e. **No Impact.** The Proposed Project site is not located within an airport land use plan. The nearest public airstrip is approximately 9 (Delano Municipal Airport) miles away.

f. **No Impact.** The Proposed Project site is not located near a private airstrip. No private airstrips were identified within five (5) miles of the Proposed Project site.

g. **No Impact.** There are no emergency response plans which involve the Proposed Project site.

h. **No Impact.** Wildlands are not present within the Project area. The Proposed Project site consists of graded and paved land which is separated from other land uses. No changes in adjacent land uses are proposed.

IX. 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?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) 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?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY (continued)

Discussion

a. **No Impact.** The Proposed Project consists of improvements to existing groundwater extraction facilities. The improvements will remove 1,2,3-TCP from extracted groundwater to meet water quality standards. Construction requirements such as a Storm Water Pollution Prevention Plan (SWPPP) will be utilized to prevent water quality impacts during construction of the improvements.

b. **No Impact.** The Proposed Project consists of improvements to existing groundwater extraction facilities. The Proposed Project utilizes existing facilities and will not result in community growth that would increase groundwater use.

c. **No Impact.** The Proposed Project area consists of leveled and concrete paved land. Elements of the Proposed Project will be constructed at existing grades. No changes to existing grades on or adjacent to the Project site are proposed. The Proposed Project would not substantially alter the existing drainage pattern of the area.

d. **No Impact.** The Proposed Project site consists of leveled and concrete paved land. The Proposed Project includes additional concrete equipment pads and paving. The increase in impervious area would not substantially alter the existing drainage quantity of the area.

e. **No Impact.** The Proposed Project area is served by a stormwater drainage system that includes a stormwater retention pond that is adjacent to the Project site. The amount of additional impervious surface resulting from the Proposed Project is very small when compared to the area served by the retention pond. See response to Item (d).

f. **No Impact.** The Proposed Project, whether during construction or following completion, would not degrade water quality. The Proposed Project will remove 1,2,3-TCP from groundwater, consequently improving water quality. See response to Item (a).

g. **No Impact.** The Proposed Project does not include dwelling units.

h. **No Impact.** The Proposed Project is not located within the 100-year flood plain. Consequently, Project elements will not impede or redirect flood flows. National Flood Hazard Layer Firmette maps are attached for reference.

i. **No Impact.** The Proposed Project does not change the existing conditions of the Project area. A Tulare County storm water basin is located next to the Proposed Project site.

j. **No Impact.** The Proposed Project site is located approximately 95 miles from the Pacific Ocean and separated by the coastal mountain ranges (elevation of approximately 3,000 ft). Consequently, the Proposed Project site is not subject to inundation by tsunami. The Proposed Project site is not located adjacent to an enclosed body of water that could be subject to a seiche. The Proposed Project site is not located in an area where mud flows occur.

X. 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?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a. **No Impact.** The Proposed Project area is located on the southern edge of the unincorporated community of Earlimart.

b. **No Impact.** There are no conflicts between the Proposed Project and the Tulare County General Plan. The Proposed Project site consists of leveled and concrete-paved land for a groundwater well and hydropneumatic tank.

c. **No Impact.** No Habitat Conservation Plan has been identified for or that includes the Project area. Since the Proposed Project does not result in any change to existing land use and associated conditions, it not expected to conflict with applicable conservation plan or any Natural Communities Conservation Plan.

XI. 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?	☐	☐	☐	☒
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 land use plan?	☐	☐	☐	☒

Discussion

a. **No Impact.** The Proposed Project is located within a California Mineral Land Classification System (CMLCS) Mineral Resource Zone (MRZ) or Aggregate Resource Area (ARA) study area as documented by the California Geological Survey Information Warehouse. The Tulare County General Plan (2012) however, does not include the Proposed Project site with its recognized Mineral Resource Zone (Figure 8-2).

b. **No Impact.** The Project Location is not delineated on Tulare County's General Plan as a locally important mineral resource recovery site.

XII. NOISE

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XII. NOISE (continued)

Discussion

a. **Less than Significant Impact.** During construction, the potential exists for noise to occur in excess of the Tulare County's General Plan standards. The Proposed Project's construction specifications will require construction activities to follow all applicable laws and limit noise generation. Due to the rural location, proximity to State Highway 99 and agricultural nature of the area adjacent to the Proposed Project, any noise created by construction would be consistent with that of the surrounding area and would not adversely impact the adjacent residents. Upon completion, the Proposed Project operation does not offer an increase in existing noise levels.

b. **Less than Significant Impact.** The potential for construction-related vibrations exists. Due to the rural location, proximity to State Highway 99 and agricultural nature of the Proposed Project area, vibration resulting from construction would be consistent with that of existing vehicular traffic and agricultural equipment and would not adversely impact adjacent residents. The Proposed Project's construction specifications will require construction activities to follow all applicable laws to limit vibration. Upon completion, the Proposed Project operation does not offer an increase in existing vibration levels.

c. **No Impact.** The Proposed Project does not include the addition of any equipment that operate mechanically. Consequently, the Proposed Project should not represent an increase in existing noise levels.

d. **No Impact.** The Project's construction specifications will require construction activities to follow all applicable laws and limit noise generation to eliminate the potential for substantial noise levels. See response to Item (a).

e. **No Impact.** The Proposed Project site is not located within an airport land use plan. The nearest public airstrip is approximately 9 miles away (Delano Municipal Airport).

f. **No Impact.** The Proposed Project site is not located near a private airstrip. No private airstrips are located within five (5) miles of the Proposed Project.

XIII. POPULATION AND HOUSING **Would the project:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a. **No Impact.** The scope of Proposed Project consists of improvements that will improve water supply reliability and maintain existing water supplies. The Proposed Project does not provide water supply to support population growth. The potential exists that additional building (housing) could occur on parcels within the Urban Development Boundary (UDB) of the community based upon available water supply capacity. The current available water capacity will limit population growth.

b. **No Impact.** The Proposed Project occurs on District-owned land that does not include housing features. The Proposed Project does not displace or otherwise affect existing housing.

c. **No Impact.** The Proposed Project occurs on District-owned land that does not include housing features. The Proposed Project does not result in the displacement of any people. The Proposed Project will not necessitate the construction of replacement housing.

XIV. 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 service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion

No Impact. The District's domestic water supply facilities represent the only public services affected by the Proposed Project. Construction will occur on the existing well site and will not result in adverse physical impacts. No changes to service ratios, service times or other public service performance objectives will occur. The Proposed Project will improve water supply delivery capabilities. Sufficient water supply capacity exists to prevent adverse environmental effects during the construction of improvements. Construction sequencing of improvements will also be used to minimize any potential impacts during construction.

XV. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

a. **No Impact.** The Proposed Project does not include any changes to the existing water supply or water system that would result in an increase in use of existing parks or recreational facilities.

b. **No Impact.** The Proposed Project does not include recreational facilities.

XVI. TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

XVI. TRANSPORTATION/TRAFFIC (continued)

Discussion

a. **No Impact.** The Proposed Project does not include any transportation-related elements. All existing transportation modes and routes will not be affected by the completion of the Proposed Project. All construction activities will be performed at the Proposed Project site which is owned by the District and would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness.

b. **No Impact.** All construction activities will be performed on District owned land or within granted easements, which would not conflict with an applicable congestion management program.

c. **No Impact.** The Proposed Project will not affect any air traffic patterns. The nearest airport is located approximately 9 miles away (Delano Municipal Airport).

d. **No Impact.** The Proposed Project does not include any features that will increase hazards. New facilities will be constructed on District-owned land which uses security fencing along the perimeter.

e. **No Impact.** The Proposed Project does not result in the alteration of the present access to the Proposed Project site. Therefore, adequate emergency access would be maintained.

f. **No Impact.** The Proposed Project does not impact any transportation-related elements. See response to Item (a).

XVII. UTILITIES AND SERVICE SYSTEMS **Would the project:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVII. UTILITIES AND SERVICE SYSTEMS (continued)

Discussion

a. **No Impact.** The Proposed Project does not include wastewater treatment or disposal improvements. Construction and subsequent operation of the Proposed Project will not result in any changes to existing wastewater flows or characteristics. Consequently, the Proposed Project will not change the overall facility features and conditions covered by the WDRs.

b. **No Impact.** The Proposed Project consists of the installation of improvements on an existing groundwater well site. The site is developed and regularly maintained. The Proposed Project will allow the District to resume utilizing water supplies lost by contamination. The Proposed Project does not develop any additional water supplies.

c. **No Impact.** The Proposed Project does not include new storm water drainage facilities.

d. **No Impact.** The Proposed Project does not require new water supplies. The Proposed Project will allow the District to resume utilizing water supplies lost by contamination.

e. **No Impact.** The Proposed Project does not address wastewater treatment and disposal capacity. The Proposed Project will not result in additional wastewater flows (demands).

f. **No Impact.** The Proposed Project does not result in a change in the solid waste generation or disposal of the existing facilities. The construction phase of the Proposed Project will generate additional solid waste on a temporary basis. Specifications will require proper handling and disposal of construction-related materials. In general, the construction-related materials (i.e., concrete, soil, etc.) can be recycled by the available landfill facilities.

g. **No Impact.** Specifications will require proper handling, storage and disposal of construction-related materials.

XVIII. 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 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, 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?	☐	☐	☒	☐
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)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Discussion

a. **Less Than Significant Impact.** As described in the previous sections, the Proposed Project will not result in any significant adverse impacts. Short-term related impacts that might occur during construction are not considered significant. Proposed Project design and/or construction specification requirements will be used to minimize impacts during construction.

b. **No Impact.** The Proposed Project is not part of a past or future project. No projects or associated elements have been identified that rely on the completion of the Proposed Project. Therefore, the individual considerations of the Proposed Project and their described potential impacts do not have related impacts that need to be collectively analyzed as part of other projects.

c. **No Impact.** No direct or indirect adverse effects on the human population have been identified through the completion of this Initial Study.

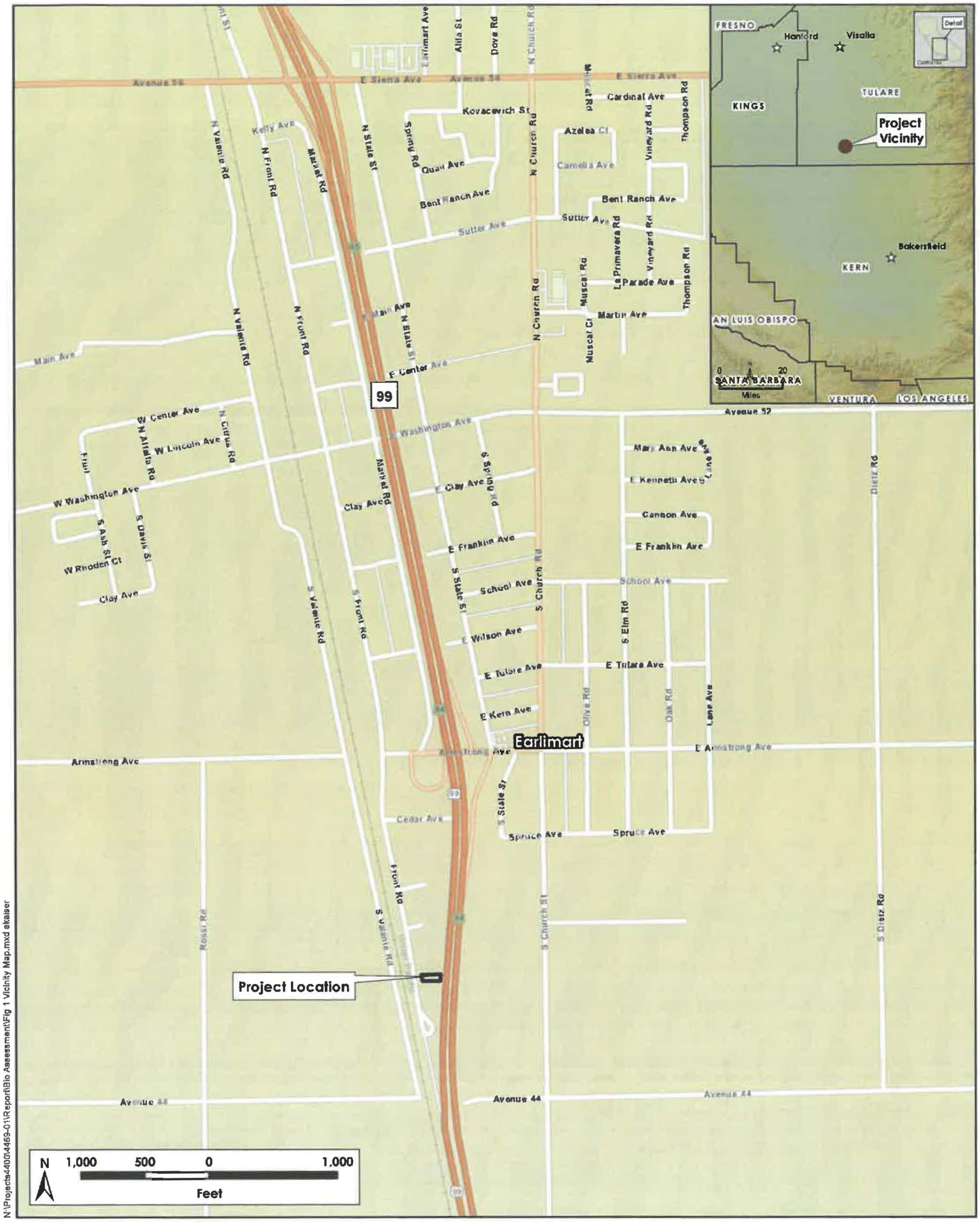
APPENDIX A

PROPOSED PROJECT

FRONT STREET WELL

IMPROVEMENTS PROJECT

EARLIMART PUBLIC UTILITY DISTRICT



N:\Projects4400\4469-01\Report\Bio Assessment\Fig 1 Vicinity Map.mxd akaiser

H. T. HARVEY & ASSOCIATES

Ecological Consultants

Figure 1. Vicinity Map

Earlimart Public Utility District Biological Assesement (4469-01)

September 2020

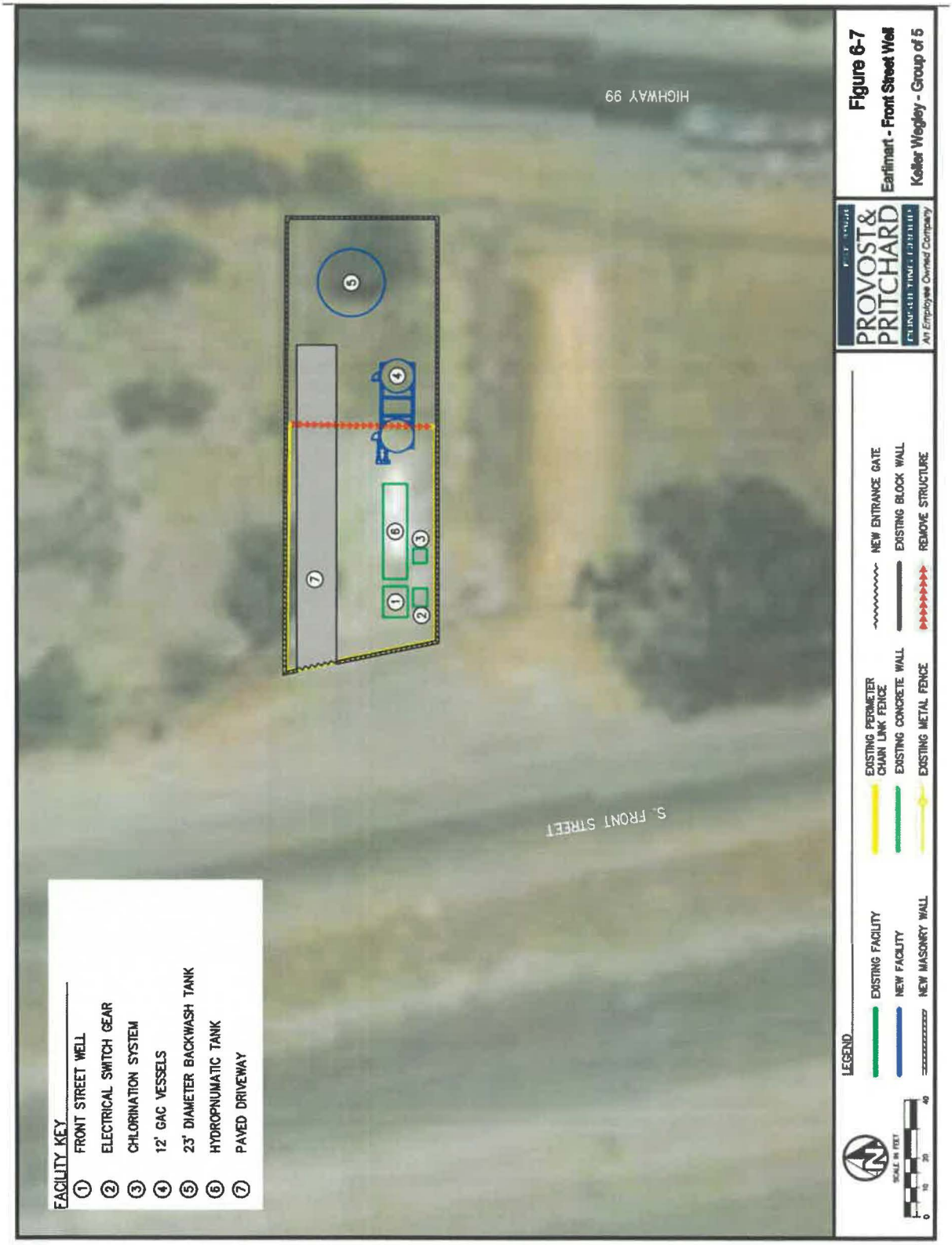


Figure 6-7: Earlimart Front Street Well

4-24-25

One Sheet Only

RECORD OF SURVEY

BEING A PORTION OF PARCEL 2 OF PARCEL MAP 495 AS RECORDED IN BOOK 5 OF PARCEL MAPS AT PAGE 95, T.C.R. ALSO BEING A PORTION OF THE NE 1/4 OF SECTION 4 T.24S., R.25E. M.D.B.&M., TOWN OF EARLIMART, COUNTY OF TULARE, STATE OF CALIFORNIA.

FEBRUARY, 1988

OWNER:

EARLIMART PUBLIC UTILITY DISTRICT
168 NORTH FRONT
POST OFFICE BOX 108
EARLIMART, CALIFORNIA 93219

ENGINEER:

DAVID L. ZACK & ASSOCIATES
CIVIL and AGRICULTURAL ENGINEERS
1901 E. TULARE AVENUE
TULARE, CA 93274 -- (209) 688-7460

SURVEYOR'S STATEMENT

This map correctly represents a survey made by me or under my direction in conformance with the requirements of the Land Surveyors Act at the request of EARLIMART P.U.E. in FEBRUARY, 1988.

DAVID L. ZACK R.C.E. 14651

REGISTERED PROFESSIONAL ENGINEER — DAVID L ZACK — No. 14651 — CIVIL — STATE OF CALIFORNIA

EXPIRES 3/31/89

COUNTY SURVEYOR'S STATEMENT

This map has been examined in accordance with Section 8766 of the Land Surveyors Act this 1st day of April, 1988.

Doug Wilson, County Surveyor
R.C.E. 20989

COUNTY SURVEYOR — TULARE COUNTY, CALIFORNIA

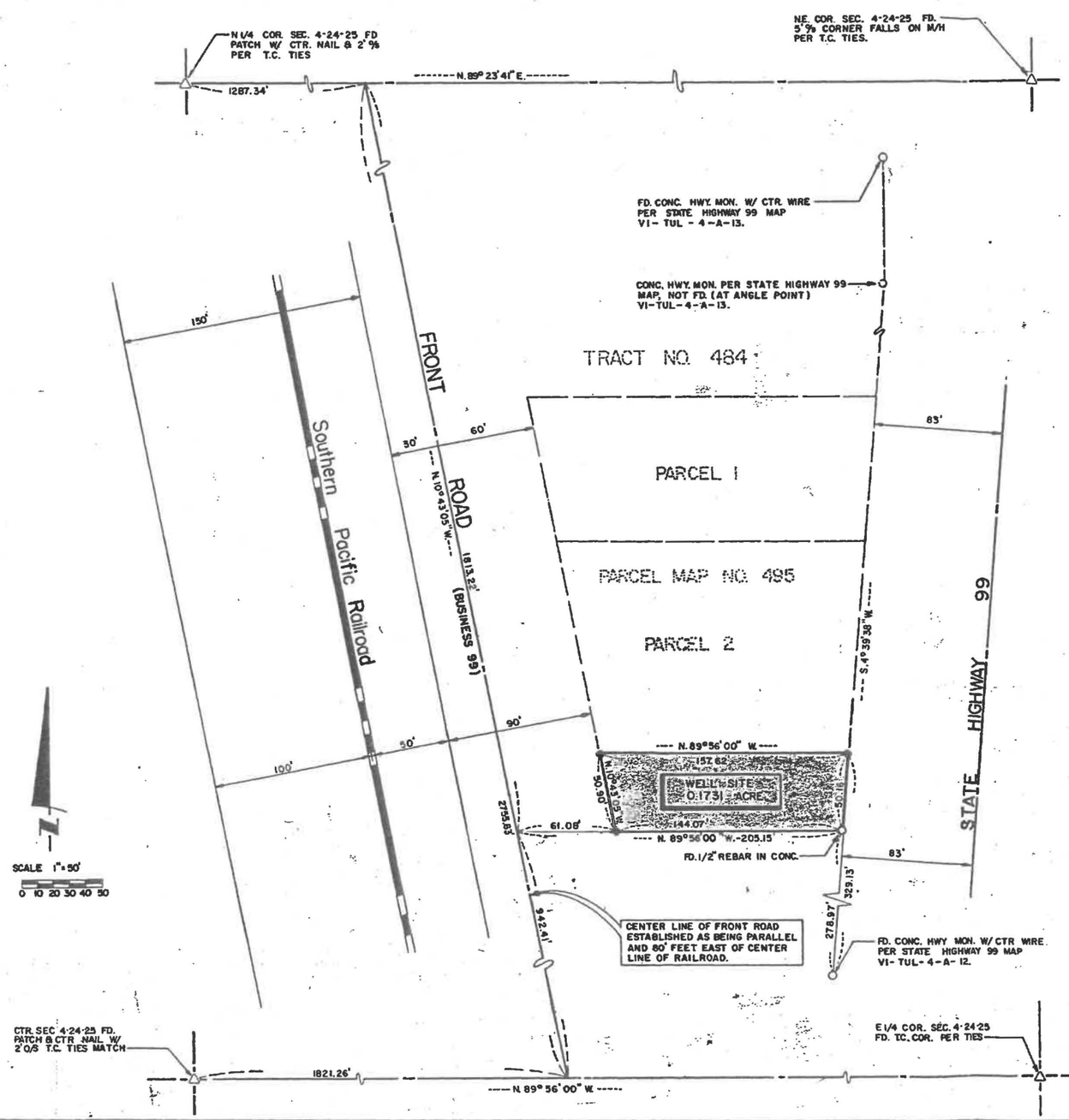
COUNTY RECORDER'S STATEMENT

Filed this 4th day of April, 1988, at 11:30 A.M. in Book 16 of Licensed Surveys at Page 35 at the request of EARLIMART P.U.E.

Joy C. Bayless, Tulare County Recorder

Fee paid $ 6.00 Fee No. 17498

by Nadine Burgoon, Deputy

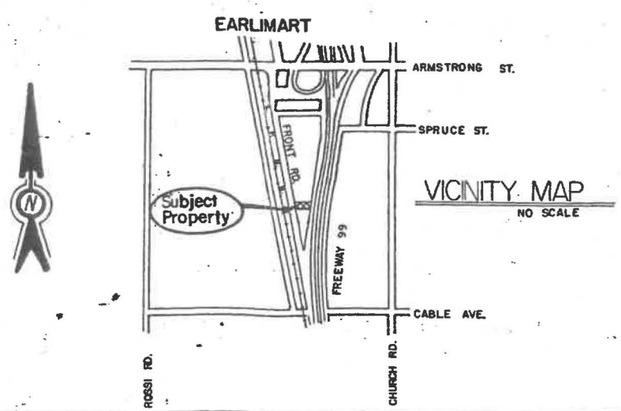


ENGINEERS NOTES

SET 1/2" IRON PIPE TAGGED R.C.E. 14651 ..... ◆
FOUND CONCRETE MONUMENT ..... ○
FOUND MONUMENT AS DESCRIBED ..... △
ALL DISTANCES IN FEET AND DECIMALS THEREOF.

BASIS OF BEARINGS

THE CENTER LINE OF FRONT ROAD (BUSINESS 99) BEARS N. 10° 43' 05" W. AS SHOWN ON TRACT NO. 484 AS RECORDED IN VOLUME 25 OF MAPS AT PAGE 17, T.C.R.



8-8-1-4

APPENDIX B

AIR EMISSIONS/GREENHOUSE GASES ESTIMATES

FRONT STREET WELL

IMPROVEMENTS PROJECT

EARLIMART PUBLIC UTILITY DISTRICT

ESTIMATED EMISSIONS
FRONT STREET IMPROVEMENTS PROJECT
EARLIMART PUBLIC UTILITY DISTRICT

The estimated Project construction and operational air emissions are summarized below. The emission estimates were generated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. based upon the installation of a GAC treatment system consisting of two 12-foot diameter pressure vessels, interconnecting piping, 40,000 gallon backwash water recovery storage tank, pump, pipeline and connections to the existing system over a 365 day construction schedule. The full CalEEMod emissions estimate report is available for review at the District office.

Pollutant	Status (Attainment, Nonattainment or Unclassified)	Threshold of Significance for the Area (if applicable (Tons/Year) (1)	Construction Emissions (Tons/Year)	Operations Emissions (Tons/Year) (2)
Carbon Monoxide (CO)	Attainment	100	0.7	0.1
Ozone (O_3)	Non Att. / Extreme	10 (EPA De Minimis)	Unknown (Note 3)	Unknown (Note 3)
Oxides of Nitrogen (NO_x)	Unknown	10	0.7	0.08
Particulate Matter (PM_{10})	Non Att. / Attainment	15	0.04	0.03
Reactive Organic Gases (ROG)	Unknown	10	0.1	0.03
Sulfur Dioxide (SO_2)	Attainment	100 (EPA De Minimis)	0.001	0.0005
Volatile Organic Compounds (VOC)	Unknown	50 (EPA De Minimis)	Unknown (Note 3)	Unknown (Note 3)
PM 2.5	Non Att.	15	0.003	0.001
CO2 (Greenhouse Effect)	Does not apply	10,000 Metric Tons (California Air Resources Board)	101	51
Lead (Pb)	Attainment	25	Unknown (Note 3)	Unknown (Note 3)

Notes:

1. San Joaquin Valley Air Pollution Control District adopted thresholds, unless otherwise noted.
2. Results reflect CalEEMod light industrial land use. The project consists of non-energized treatment equipment and will not result in significant changes to existing groundwater well operations.
3. Not calculated by CalEEMod.

APPENDIX C

BIOLOGICAL RESOURCES REPORT

FRONT STREET WELL

IMPROVEMENTS PROJECT

EARLIMART PUBLIC UTILITY DISTRICT

Earlimart Public Utility District

Front Street Well Improvements

Biological Assessment
September 2020

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Acronym List

BA – biological assessment

CDFW – California Department of Fish and Wildlife

CNDDB – California Natural Diversity Database

FESA – Federally Endangered Species Act

GAC – granular activated carbon

IPaC – Information for Planning and Consultation

MBTS – Migratory Bird Treaty Act

NMFS – National Marine Fisheries Services

PUD – Public Utility District

SR – state route

TCP – trichloropropane

USFWS – United States Fish and Wildlife Service

Executive Summary

This biological assessment (BA) has been prepared for the Earlimart Public Utility District (PUD) Front Street Well Improvements Project (Project) pursuant to Section 7(a)(2) of the federal Endangered Species Act (FESA), as amended (16 U.S.C. § 1531 et seq.), and its implementing regulations (50 C.F.R. § 402.1 et seq.). The primary purpose of this BA is to document the Earlimart PUD's conclusions and rationale regarding potential effects of the Front Street well improvements and well operations on federally listed plant and animal species, state listed plant and animal species, state species of special concern, rare plants, and migratory birds. For purposes of this BA, these species are identified as 'special status species'. This BA provides a description of construction and operational activities and an analysis of the effects of the Project's direct and indirect impacts on special status species in the project area.

Chapter 1.Introduction

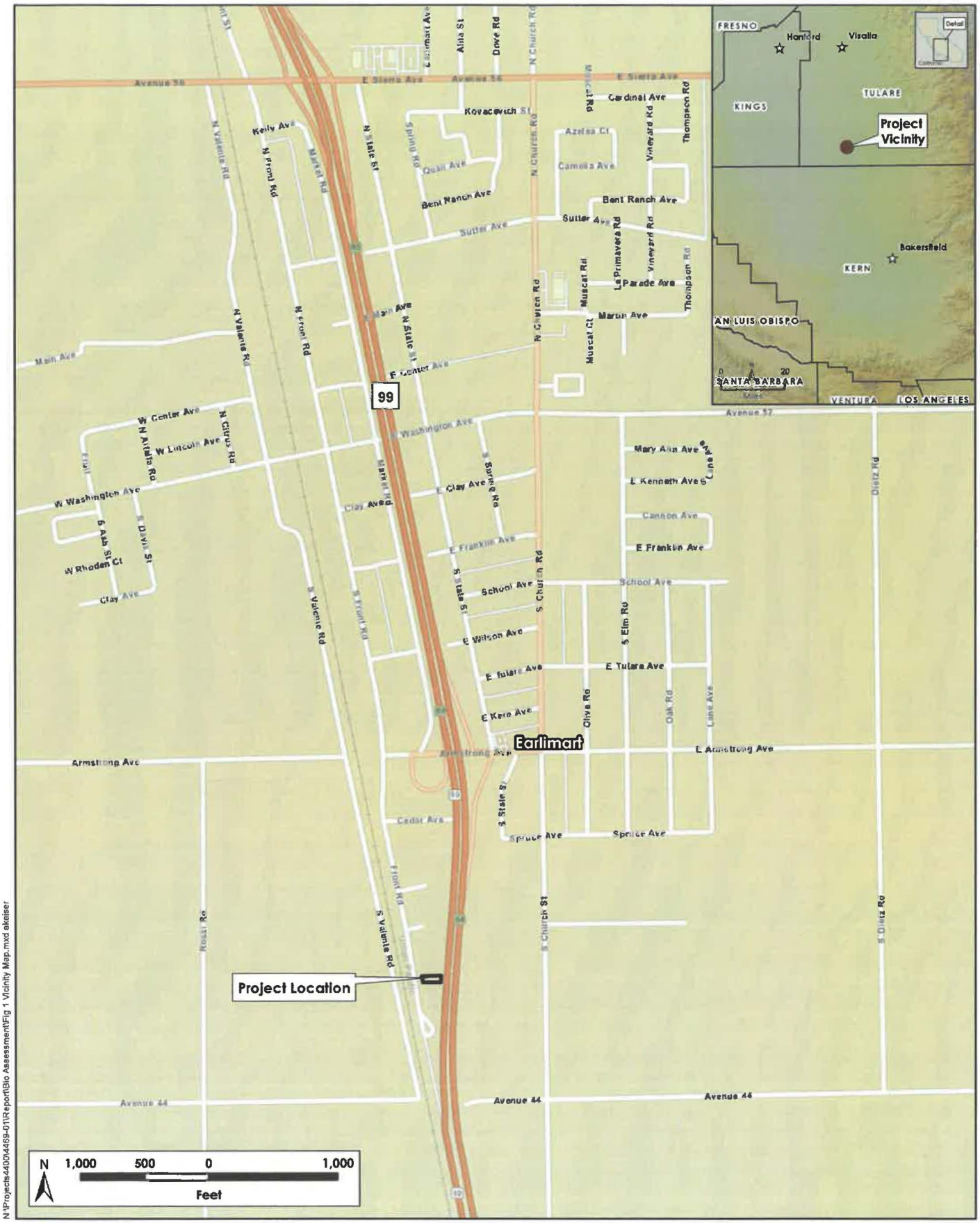
1.1. Purpose and Need of the Proposed Action

Earlimart PUD proposes to construct an onsite granular activated carbon (GAC) treatment plant at the Front Street Well to improve water quality. This involves the installation of two additional GAC vessels and a backwash tank for the removal of trichloropropane (TCP). There is sufficient space on the approximately 0.2-acre parcel to add the two GAC vessels and backwash tank, but the eastern fence would need to be removed and extended to the parcel boundary. A masonry wall would be installed to reduce the visual footprint of the facility and to provide security. The west wall on South Front Street would be constructed with a vehicle gate and paved driveway to allow access for the delivery of carbon.

The Front Street Well (project) is located at the southern limits of Earlimart, California, in Tulare County. The project is situated between State Route (SR) 99 and South Front Street (Figure 1). Residential housing lies directly north of the project site and agricultural land occurs west, east, and south of the project.

1.2. Special Status Species and Critical Habitats Assessed

Special status species assessed for the project were identified through the following means and include federal- and state-listed species, species of concern, rare plant species, and migratory birds. A species list for the action area of this project was obtained from the U. S. Fish and Wildlife Service (USFWS) (Appendix A). Furthermore, plant and animals lists were generated from queries of the California Natural Diversity Database (CNDDB), and additional plants were assessed based upon a query of California Native Plant Society (CNPS) database on August 18, 2020 (Appendix A). The National Marine Fisheries Service (NMFS) website was queried, but no listed species populated for the action area, which is consistent with the upland nature of the action area. Migratory birds identified through the USFWS Information for Planning and Consultation (IPaC) website are included in consideration of species to be impacted by



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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 1. Vicinity Map
Earlimart Public Utility District Biological Assessement (4469-01)
September 2020

the project (Appendix A). Designated critical habitat for federally listed species was also considered during this analysis.

Special-status species identified through this process include the following:

Special Status Species

Mammals

- San Joaquin kit fox (*Vulpes macrotis mutica*), (FE, SE)
- Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), (FE, SE)
- American badger (*Taxidea taxus*), (SSC)

Birds

- Burrowing owl (*Athene cunicularia*), (SSC)
- Mountain plover (*Charadrius montanus*), (SSC)
- Swainson's hawk (*Buteo swainsoni*), (ST)
- Tricolored blackbird (*Agelaius tricolor*), (ST)

Reptiles and Amphibians

- Blunt-nosed leopard lizard (*Gambelia sila*), (FE, SE)
- Coast horned lizard (*Phrynosoma blainvillii*), (SSC)
- Bakersfield legless lizard (*Anniella grinnelli*), (SSC)
- Giant garter snake (*Thamnophis gigas*), (FT, ST)
- California red-legged frog (*Rana draytonii*), (FT)
- Western spadefoot (*Spea hammondii*),(SSC)

Fish

- Delta smelt (*Hypomesus tranpacificus*), (FT, SE)

Invertebrates

- Vernal pool tadpole shrimp (*Branchinecta conservation*), (FE, SE)
- Vernal pool fairy shrimp (*Branchinecta lynchi*), (FT)
- San Joaquin tiger beetle (*Cicindela tranquebarica*), (S1)
- Morrison's blister beetle (*Lytta morrisoni*), (S1S2)

Plants

- California jewelflower (*Caulanthus californicus*), (FE, SE)
- Earlimart orache (*Atriplex cordulata var. erecticaulis*), (1B.2, S1)
- Kern mallow (*Eremalche kernensis*), (FE), (1B.2, S3)

- Subtle orache (*Atriplex subtilis*), (1B.2, S1)
- Recurved larkspur (*Delphinium recurvatum*), (1B.2, S2?)
- San Joaquin woollythreads (*Monolopia congdonii*), (1B.2, S2)
- Coulter's goldfields (*Lasthenia glabrata ssp. Coulteri*), (1B.1, S2)
- Alkali mariposa lily (*Calochortus striatus*), (1B.2, S2S3)
- Howell's onion (*Allium howellii var. howellii*), (4.3, S3)
- Heartscale (*Atriplex cordulata var. cordulata*), (1B.2, S2)

Critical Habitat

The proposed action addressed within this document does not fall within any designated critical habitat for the listed species.

1.3. Authorities and Discretion

Earlimart PUD is seeking Drinking Water State Revolving Funds. As part of receiving federal funding, Earlimart PUD must evaluate potential project impacts on the listed special-status species to meet the requirements pursuant to Section 7(a)(2) of the federal Endangered Species Act (FESA), as amended (16 U.S.C. § 1531 et seq.), and its implementing regulations (50 C.F.R. § 402.1 et seq.).

1.4. Consultation History and Resource Agency Coordination

No consultation or resource agency coordination has occurred to date. Species lists were obtained from Sacramento USFWS office, USFWS IPaC, CNDDB, and CNPS (Appendix A) to inform this assessment. The NMFS website was queried, but no listed species populated for the action area.

1.5. Study Methods

H. T. Harvey & Associates completed a concise, reconnaissance level special-status biological resources assessment of the parcel. The assessment was comprised of two components: a desk-based review of existing data sources and a field-based, reconnaissance-level, pedestrian survey of the entire parcel and accessible areas within 500 feet of the parcel. H. T. Harvey & Associates biologist Colin Wilkinson surveyed the Project area on August 26, 2020.The desk-based assessment include a review of all readily available biological data sources for the parcel, including color aerial photography, the National Wetlands Inventory, the California Natural Diversity Database, Calflora, and similar existing biological databases that catalogue known locations of sensitive natural communities (e.g., wetlands) along with sensitive species of plants, fish, and wildlife.

Chapter 2. Proposed Agency Action and Environmental Baseline

2.1. Description and Location of the Proposed Action Location

The proposed action is to install two 12-foot diameter GAC vessels, a 23-foot diameter backwash tank for TCP removal treatment, and a paved driveway. Once construction is completed, Earlimart PUD will need to monitor the source water and treated water for TCP, and the GAC vessels for tracking remaining carbon life. The frequency of monitoring at the facility is dependent on level of TCP detections. On site monitoring will initially be more frequent and then evolve to a scheduled change-out of carbon. Timing of planned construction activities is unknown at this time.

The proposed action is located in Tulare County, California, at coordinates 35.87257 -119.27119 in Section 4, Township 24S, Range 25E in quadrangle Delano West (Figure 1). The proposed action is in a highly disturbed area and is situated between a frontage road (Frontage Street) and a state route (SR 99). The frontage road becomes an onramp for SR 99 South.

2.2. Environmental Baseline

The proposed action is a parcel of approximately 0.2 acres of disturbed habitat and small facility for water treatment. The water treatment facility consists of a concrete pad, a well, an electrical switch gear, a chlorination system, and a hydropnunatic tank located on the fenced, west half of the project parcel, and accounts for approximately 50 percent of the parcel. The remaining approximately 50 percent on east half of the project parcel is disturbed nonnative annual grassland, which had been recently tilled. Dominant plant species of the nonnative annual grassland include foxtail chess (*Bromus madritensis*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), Horse nettle (*Solanum elaeagnifolium*), prickly lettuce (*Lactuca serriola*), Russian thistle (*Salsola tragus*), Canada horseweed (*Erigeron Canadensis*), and red gum (*Eucalyptus camaldulensis*). Photographs of the site and adjacent area are provided in Appendix B.

Immediately south of the project parcel is a fenced overflow basin, where water drips from a pipe and the habitat is more mesic. Vegetation consists predominantly of Johnsongrass (*Sorghum halepense*) with curly dock (*Rumex crispus*), tall cyperus (*Cyperus eragrostis*), and red rooted cyperus (*C. erythrorhizos*). Other plants occurring south of the project parcel are similar to the nonnative grassland in the west half of the project parcel.

Adjacent land uses include transportation corridors, residential development, and agriculture (i.e., primarily orchards and vineyards).

Habitat conditions are highly disturbed. The level of disturbance, size of the parcel, location of parcel, and surrounding land uses make the habitat highly unsuitable for

species on the list and contributes to their absence from the area. Common nesting birds may use this habitat during the breeding season.

2.3. Survey Results

No special status species or their sign was observed within the action area. Furthermore, there is no suitable habitat for special-status species within the action area.

Wildlife species observed within the vicinity of the action area during the survey included Red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhnchos*), Mourning dove (*Zenaida macroura*), House finch (*Haemorhous mexicanus*), Northern mocking bird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), Eurasian collared dove (*Streptopelia decaocto*), House sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*). A domestic cat (*Felis catus*) was also observed in the area.

Chapter 3.Effects of the Action

3.1. Effects of the Action

The proposed action will have no effect on special-status species because suitable habitat conditions are absent from the project site and action area (Table 1). Suitable nesting substrate occurs for raptors and nesting birds. The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and it prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents". Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction. All nesting birds, their eggs, and their nestlings are protected by the California Fish and Game Code (Section 3503). If birds nest in areas where direct construction disturbance will occur, work during the breeding season (typically February 1 through August 31) could result in the destruction of nests, eggs, or young.

The effects on nesting birds would be limited to individuals and would not have an effect on species populations. The effects of the action would be limited to the construction phase.

The location and limited size of the action would have no cumulative effect on migratory bird populations, with the implementation of the conservation measures described below.

Table 1. Special-status species and migratory birds, and effect determinations.

Species	Scientific Name	Listing Status[1]	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
Mammals					
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, SE	No	No	No Effect. No suitable dens, no prey base, poor, unlikely corridor with poor connectivity to urban and orchards or vineyards.
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	FE, SE	No	No	No Effect. No suitable habitat, hardscape or tilled disturbed, overgrown weedy grassland, no burrows.
American badger	*Taxidea taxus*	SSC	No	No	No Effect. No suitable dens, no prey base, habitat is suboptimal and disturbed. Unlikely corridor with poor connectivity to urban and orchards or vineyards.
Birds					

Species	Scientific Name	Listing Status[1]	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
Burrowing owl	*Athene cunicularia*	SSC	No	No	No Effect. No suitable habitat, hardscape or tilled disturbed, overgrown weedy grassland, no burrows.
Mountain plover	*Charadrius montanus*	SSC	No	No	No Effect. No suitable habitat, hardscape, tilled weedy grassland, orchards and vineyards in vicinity.
Swainson's hawk	*Buteo swainsoni*	ST	No	No	No Effect. Appropriate nesting trees in vicinity, but suitable foraging habitat largely lacking. No known historic nests within several miles of project.
Tricolored blackbird	*Agelaius tricolor*	ST	No	No	No Effect. No suitable habitat, no wetlands or agricultural crops amenable to breeding colonies in the

Species	Scientific Name	Listing Status[1]	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
					immediate vicinity.
Reptiles					
Blunt-nosed leopard lizard	*Gambelia sila*	FE, SE	No	No	No Effect. No suitable habitat, hardscape or tilled disturbed, overgrown weedy grassland, no burrows.
Coast horned lizard	*Phrynosoma blainvillii*	SSC	No	No	No Effect. No suitable habitat, No scalds or typical foraging habitat. Adjacent weedy grassland recently tilled.
Bakersfield legless lizard	*Anniella grinnelli*	SSC	No	No	No Effect. No suitable habitat. No sandy soils or soils suitable for burrowing.
Giant garter snake	*Thamnophis gigas*	FT, ST	No	No	No Effect. No suitable habitat, no nearby aquatic habitat.
Amphibians					
California red-legged frog	*Rana draytonii*	FT	No	No	No Effect. No suitable habitat, no nearby aquatic habitat.

Species	Scientific Name	Listing Status[1]	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
Western spadefoot	*Spea hammondii*	SSC	No	No	No Effect. No suitable habitat, no nearby aquatic habitat.
Fish					
Delta smelt	*Hypomesus tranpacificus*	FT, SE	No	No	No Effect. No suitable habitat, no nearby aquatic habitat.
Invertebrates					
Vernal pool tadpole shrimp	*Branchinecta conservation*	FE, SE	No	No	No Effect. No suitable habitat present.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	No	No	No Effect. No suitable habitat present.
San Joaquin tiger beetle	*Cicindela tranquebarica*	S1	No	No	No Effect. No suitable habitat, no alkali sink habitat or washes.
Morrison's blister beetle	*Lytta morrisoni*	S1S2	No	No	No Effect. No suitable habitat, habitat is unlikely to support wildflowers or solitary bees for larvae host.
Plants					

Species	Scientific Name	Listing Status[1]	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
California jewelflower	*Caulanthus californicus*	FE, SE	No	No	No Effect. No suitable habitat, disturbed weedy habitat that was recently tilled.
Earlimart orache	*Atriplex cordulata var. erecticaulis*	1B.2, S1	No	No	No Effect. No suitable habitat, no saline or alkaline soils.
Kern mallow	*Eremalche kernensis*	FE, 1B.2, S3	No	No	No Effect. No suitable habitat, no open sandy to clay soils, dense disturbed weedy habitat.
Subtle orache	*Atriplex subtilis*	1B.2, S1	No	No	No Effect. No suitable habitat, no alkaline soils or alkaline sink habitat.
Recurved larkspur	*Delphinium recurvatum*	1B.2, S2?	No	No	No Effect. No suitable habitat, no alkali sink habitat.
San Joaquin woollythreads	*Monolopia congdonii*	1B.2, S2	No	No	No Effect. No suitable habitat, no sandy soils or sparsely vegetated habitat.

Species	Scientific Name	Listing Status[1]	Presence of Species in Action Area (Yes/No)	Presence of Critical Habitat in Action Area (Yes/No)	Effect Determination
Coulter's goldfields	*Lasthenia glabrata ssp. Coulteri*	1B.1, S2	No	No	No Effect. No suitable habitat, no alkaline sink or mesic open habitat.
Alkali mariposa lily	*Calochortus striatus*	1B.2, S2S3	No	No	No Effect. No suitable habitat, no alkaline soils.
Howell's onion	*Allium howellii var. howellii*	4.3, S3	No	No	No Effect. No suitable habitat, no clay or serpentine soils.
Heartscale	*Atriplex cordulata var. cordulata*	1B.2, S2	No	No	No Effect. No suitable habitat, no saline or alkaline soils.
Critical Habitat					
Valley sink scrub	*n/a*	n/a	No	No	No Effect. No suitable habitat, no requisite associated species present.

[1] Status definitions:

FE = federally endangered.

SE = state endangered

FT = federally threatened

ST = state threatened

SSC = species of special concern.

California Rare Plant Rank (CRPR) definitions:

1B = rare, threatened, or endangered in California and elsewhere.

.1 = seriously threatened in California.

.2 = fairly endangered in California

4.3 = limited distribution

State Rank

S1 = critically imperiled

S2 = imperiled

S3 = vulnerable

3.2. Conservation Measures

If construction is scheduled to commence during the non-nesting season (i.e., September 1 to January 31), no preconstruction surveys or additional measures are necessary. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31). The nesting bird survey shall include 100 percent coverage of the project site and within a 300-foot buffer around the project site, where access has been granted. Surveys shall be conducted no more than 30 days prior to construction activities. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and locally breeding raptor species without causing intrusive disturbance. If active nests are found, a qualified wildlife biologist shall establish a suitable buffer (e.g. 300 feet for common raptors; 30 to 50 feet for passerine species) around active nests wherein no construction within the buffer shall be allowed until a qualified biologist has determined that the nest is no longer active (e.g. the nestlings have fledged and are no longer reliant on the nest). Encroachment into the avoidance buffer may occur at the discretion of a qualified biologist.

3.3. Determination

3.3.1. Species and critical habitat determination

A no effect determination was made for San Joaquin kit fox, Tipton kangaroo rat, American badger, burrowing owl, Swainson's hawk, mountain plover, tricolored blackbird, blunt-nosed leopard lizard, coast horned lizard, Bakersfield legless lizard, giant garter snake, California red-legged frog, western spadefoot, delta smelt, vernal

pool tadpole shrimp, vernal pool fairy shrimp San Joaquin tiger beetle Morrison's blister beetle, California jewelflower, Earlimart orache, Kern mallow, subtle orache, recurved larkspur, San Joaquin woollythreads, Coulter's goldfields, alkali mariposa lily, Howell's onion, and heartscale. Furthermore, no designated critical habitat will be affected by the proposed action.

If birds nest in areas where direct construction disturbance will occur, work during the breeding season (typically February 1 through August 31) could result in the destruction of nests, eggs, or young. If construction is scheduled to commence during the non-nesting season (i.e., September I to January 31), no preconstruction surveys or additional measures are necessary. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31) and establish avoidance buffers around active nests.

Appendix A. Compiled Special-Status Species Lists and Queries

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2020-SLI-2673
Event Code: 08ESMF00-2020-E-08204
Project Name: Earlimart Front St Well Improvement

August 19, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2673

Event Code: 08ESMF00-2020-E-08204

Project Name: Earlimart Front St Well Improvement

Project Type: WATER QUALITY MODIFICATION

Project Description: The project is located in Earlimart, Tulare County California and is approximately 0.2-acres. The project involves improvement to an existing well by installing equipment on an undeveloped portion of an existing well site for TCP removal treatment.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.87254875980509N119.27118576447864W

Counties: Tulare, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891
Species survey guidelines:
https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/321

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8246

Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS
California Jewelflower *Caulanthus californicus*	Endangered

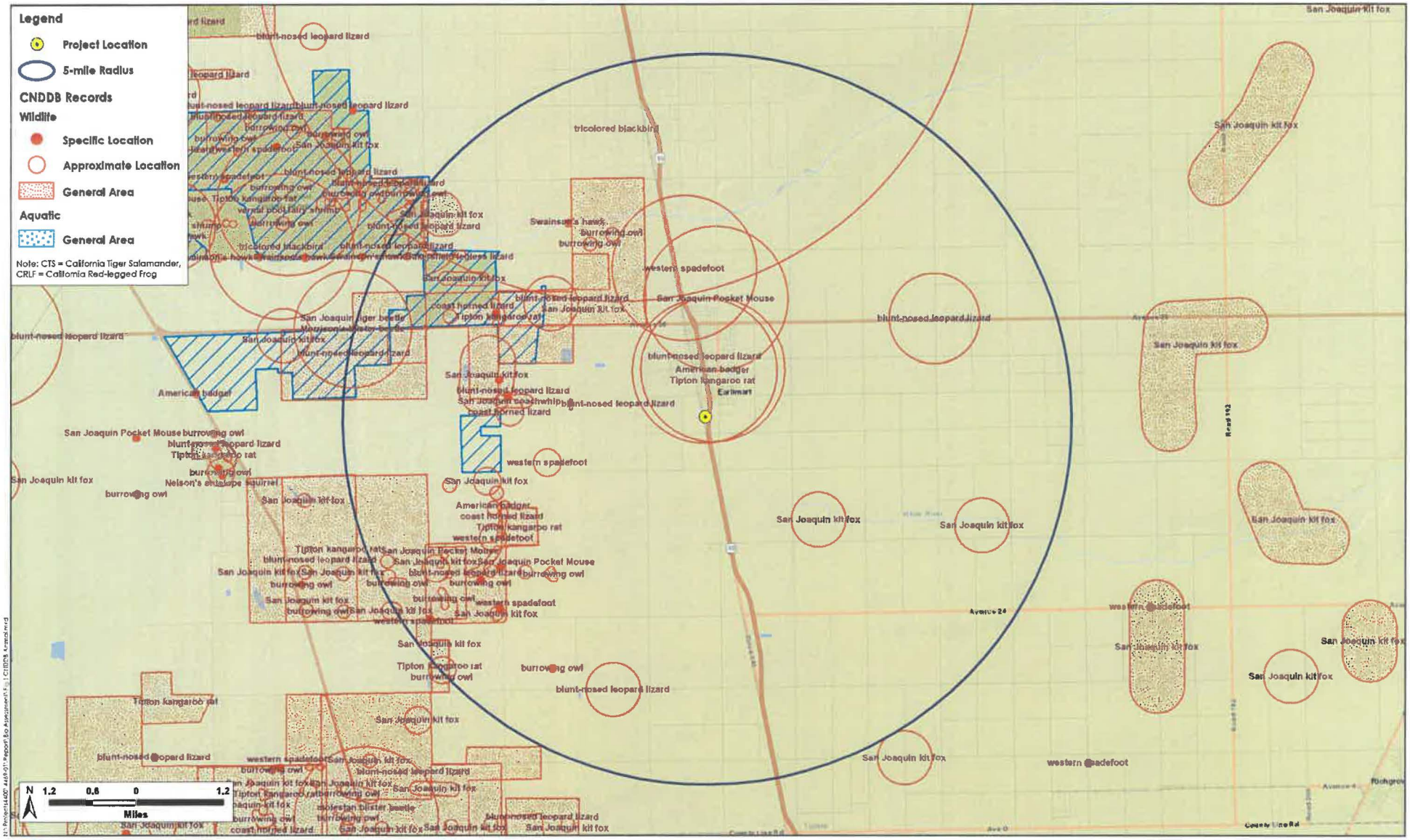
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4599

Kern Mallow *Eremalche kernensis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1731

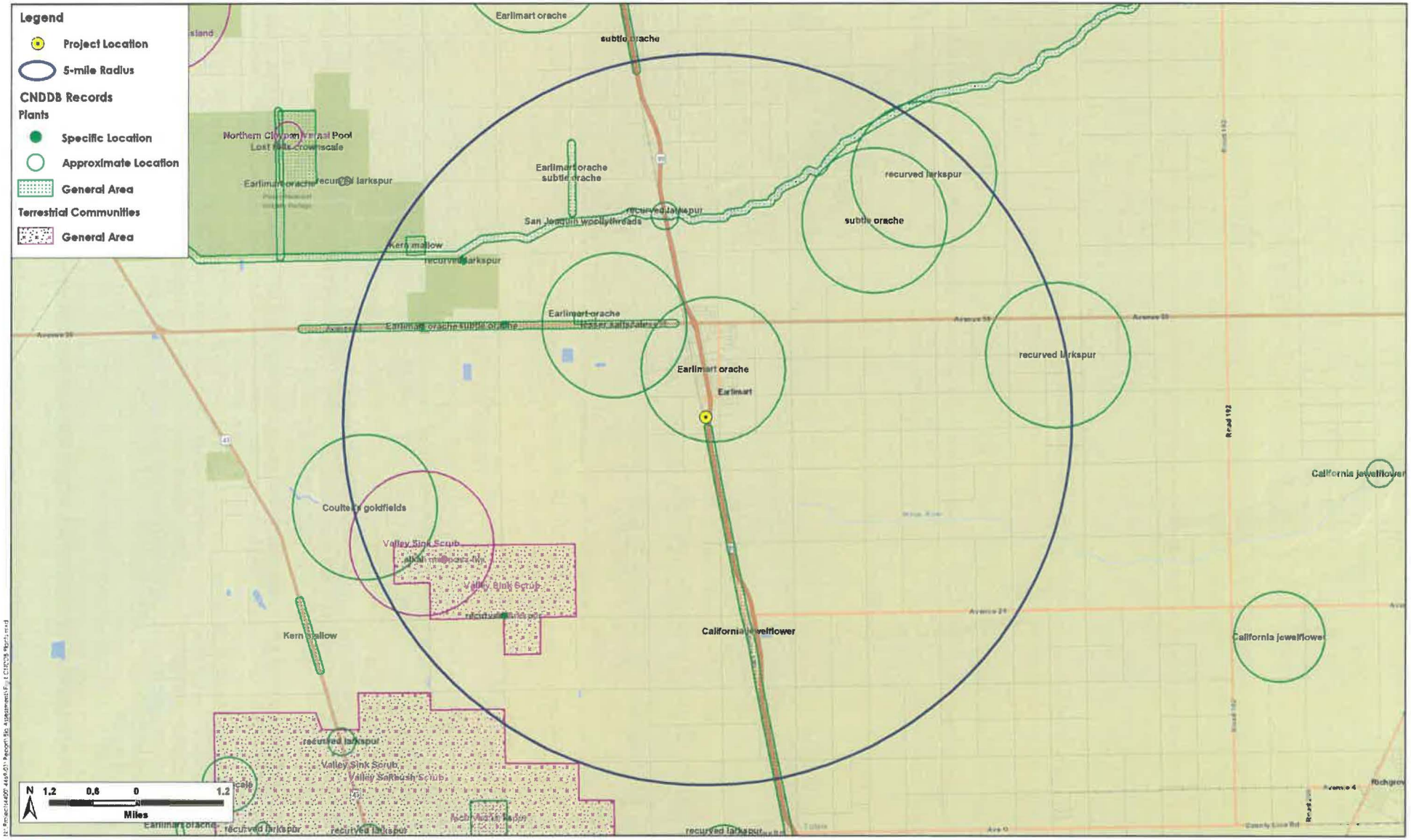
Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



H. T. HARVEY & ASSOCIATES
Ecological Consultants

CNDDB-Mapped Records of Special-Status Animals
Earlimart PUD Front Stree Well Improvements Biological Assessment (4469-01)
August 2020



H. T. HARVEY & ASSOCIATES
Ecological Consultants

CNDDB-Mapped Records of Special-Status Plants
Earlimart PUD Front Stree Well Improvements Biological Assessment (4469-01)
August 2020

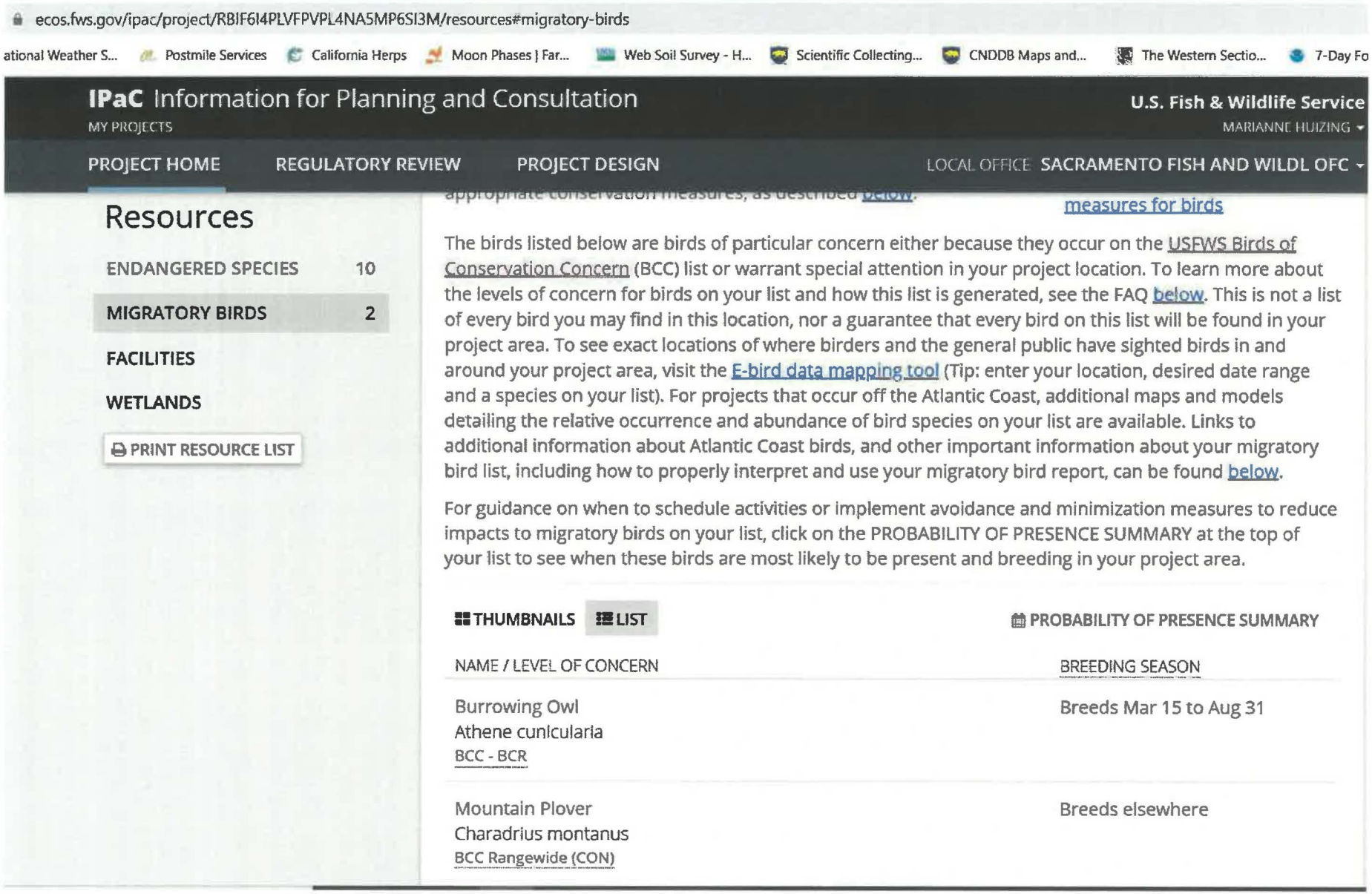
Search Criteria
Found in **Tulare County**, Found in Quad **3511973**

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium howellii var. howellii	Howell's onion	Alliaceae	perennial bulbiferous herb	Mar-Apr	4.3	S3	G3G4T3
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex cordulata var. erecticaulis	Earlimart orache	Chenopodiaceae	annual herb	Aug-Sep(Nov)	1B.2	S1	G3T1
Calochortus striatus	alkali mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2S3	G3?
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	1B.1	S1	G1
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Eremalche parryi ssp. kernensis	Kern mallow	Malvaceae	annual herb	Jan,Mar,Apr,May(Feb)	1B.2	S3	G3G4T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 19 August 2020].


ecos.fws.gov/ipac/project/RBIF6I4PLVFPVPL4NA5MP6SI3M/resources#migratory-birds
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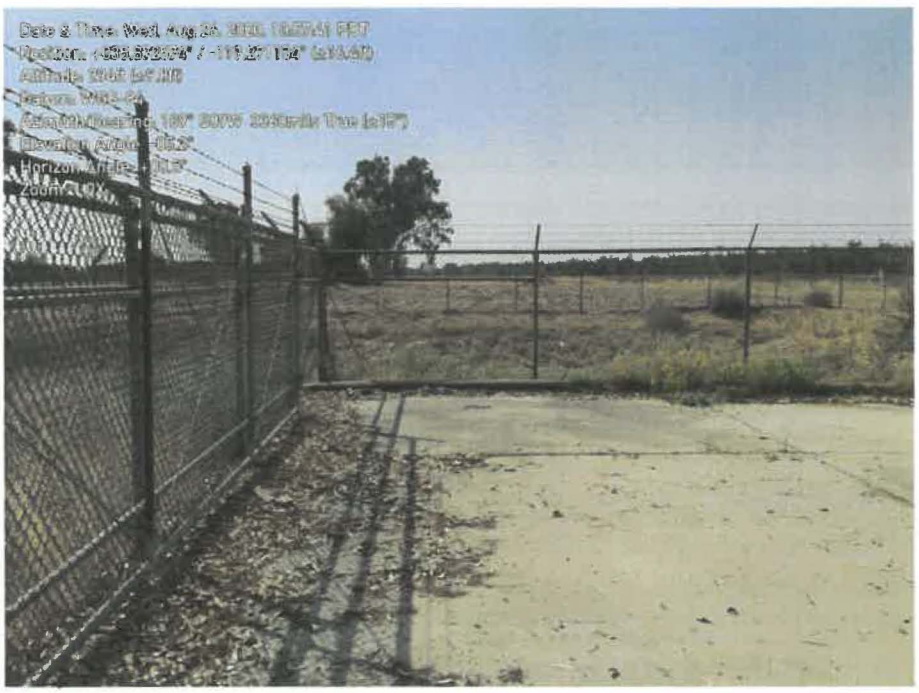
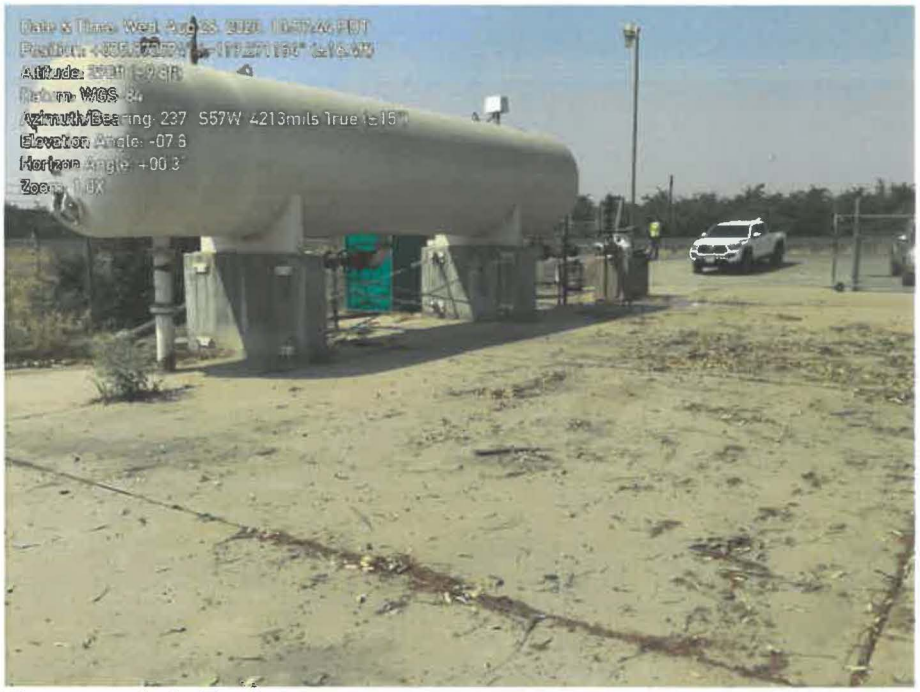
Postmile Services
California Herps
Moon Phases | Far...
Web Soil Survey - H...
Scientific Collecting...
CNDDB Maps and...
The Western Sectio...
7-Day Fo
IPaC Information for Planning and Consultation
MY PROJECTS
U.S. Fish & Wildlife Service
MARIANNE HUIZING
PROJECT HOME
REGULATORY REVIEW
PROJECT DESIGN
LOCAL OFFICE SACRAMENTO FISH AND WILDL OFC
Resources
ENDANGERED SPECIES 10
MIGRATORY BIRDS 2
FACILITIES
WETLANDS
PRINT RESOURCE LIST
appropriate conservation measures, as described below.
measures for birds
The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.
For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.
THUMBNAILS
LIST
PROBABILITY OF PRESENCE SUMMARY
NAME / LEVEL OF CONCERN
BREEDING SEASON
Burrowing Owl
Athene cunicularia
BCC - BCR
Breeds Mar 15 to Aug 31
Mountain Plover
Charadrius montanus
BCC Rangewide (CON)
Breeds elsewhere

Appendix B. Project Action Area Photographs

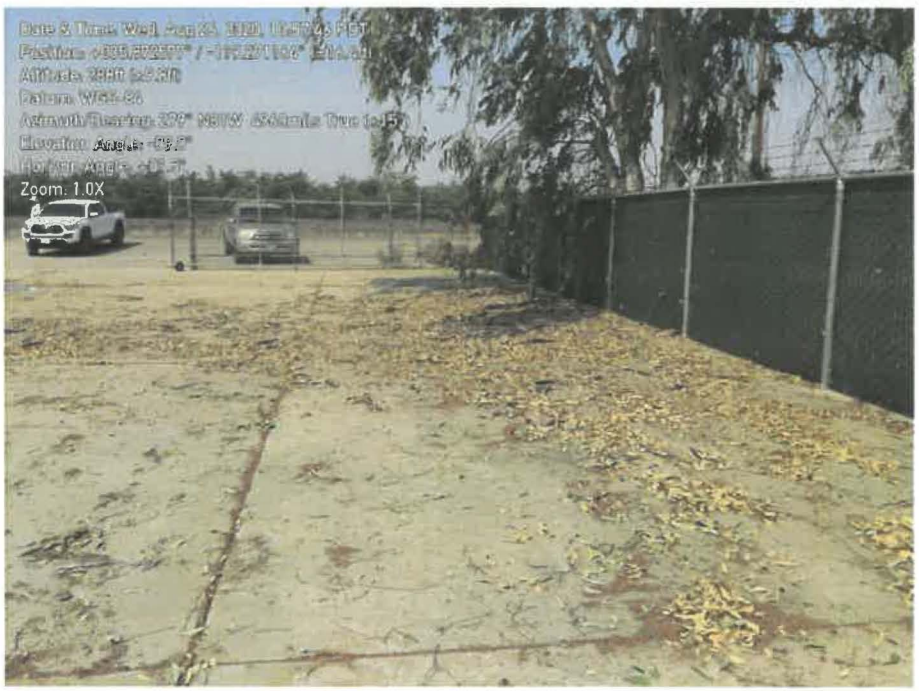
Photograph 1. Facing east.



Photograph 2. Facing south.



Photograph 3. Facing west.

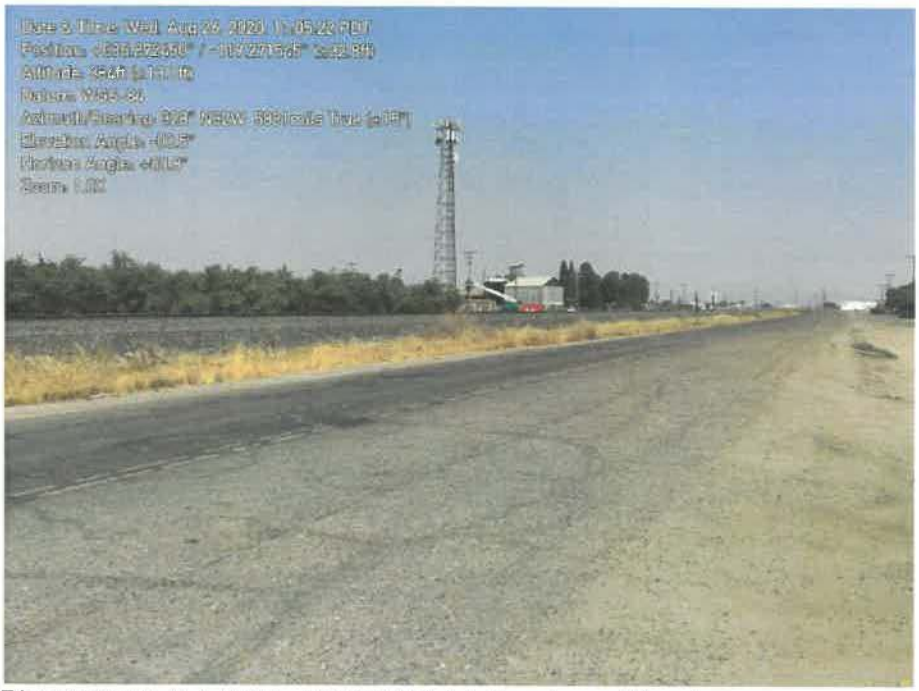


Photograph 4. Facing west.

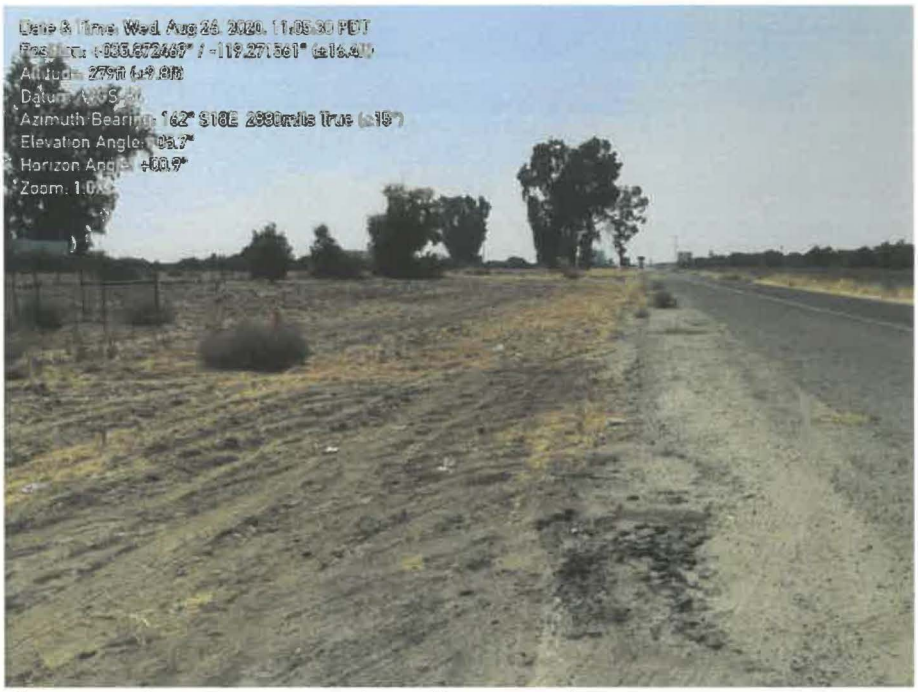
Photograph 5. Facing north.

Photograph 6. Facing south.

Photograph 7. Disturbed nonnative grassland



Photograph 8. Facing northwest on Frontage Street.



Photograph 9. Facing south on Frontage Street

APPENDIX D

CULTURAL RESOURCES REPORT

FRONT STREET WELL

IMPROVEMENTS PROJECT

EARLIMART PUBLIC UTILITY DISTRICT

Draft

CLASS III INVENTORY/PHASE I SURVEY, EARLIMART PUBLIC UTILITY DISTRICT FRONT STREET WELL IMPROVEMENTS PROJECT, TULARE COUNTY, CALIFORNIA

Prepared for:

Earlimart Public Utility District
c/o Mr. Ed Glass, RCE
Keller Wegley Engineering
209 South Locust Street
Visalia, CA 93291-6362

Prepared by:

David S. Whitley, Ph.D., RPA
Principal Investigator

and

Peter A. Carey, M.A., RPA
Senior Archaeologist

ASM Affiliates
20424 West Valley Blvd., Suite A
Tehachapi, California 93561

October 2020
PN 35540.00

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LIST OF FIGURES

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MANAGEMENT SUMMARY

An intensive Class III inventory/Phase I cultural resources survey was conducted for the Earlimart Public Utility District Front Street Well Improvements Project, Earlimart, Tulare County, California. This study was conducted by ASM Affiliates, Inc., with David S. Whitley, Ph.D., RPA, serving as principal investigator. Background studies and fieldwork for the survey were completed in August – October 2020. The study was undertaken to provide compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470; 36 CFR Part 800), and the California Environmental Quality Act (CEQA).

The proposed project consists of the installation of treatment equipment on an undeveloped portion of an existing well site. The area of potential effect (APE) for the project was defined as all ground-surface disturbance along with staging, lay-down, and work areas. For this project, the entire well site, which is fenced and totals approximately 0.2-acres (ac), is considered the horizontal APE. The vertical APE, defined as the maximum depth of excavation of foundations and footings, was 10-feet (ft).

A records search of site files and maps was conducted on August 31st, 2020, at the Southern San Joaquin Valley Archaeological Information Center (SSJVIC), California State University, Bakersfield. According to a records search results, no previous archaeological surveys had been completed within the Project area, and no cultural resources are known to exist within it. Four previous archaeological surveys had been completed within 0.5-mi of the Project APE, resulting in the recordation of a historic structure, the Southern Pacific Railroad.

A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed on August 26th, 2020. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the Project APE. Outreach letters were sent on September 17th, 2020 and follow-up emails sent on October 13th, 2020 to tribal organizations on the NAHC contact-list. No responses were received from contacted tribes.

The Class III inventory/Phase I survey fieldwork was conducted on October 16th, 2020. Due to its small size, the entire 0.2-ac APE was surveyed with parallel transects spaced at approximately 5-meter (m) intervals.

No cultural resources of any kind were identified as a result of the Class III inventory/Phase I survey. Based on these findings, the treatment equipment installation does not have the potential to result in adverse impacts to significant historical resources or properties, and a determination of No Historic Properties Affected is recommended.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates was retained by the Earlimart Public Utility District (PUD) to conduct an intensive Class III Inventory/Phase I cultural resources survey for the Earlimart PUD Front Street Well Improvements Project (Project), Earlimart, Tulare County, California. The purpose of this investigation was to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC § 300101 et seq.; 36 CFR Part 800), and the California Environmental Quality Act (CEQA). The investigation was undertaken, specifically, to ensure that no significant adverse effects or impacts to historical resources or historic properties occur as a result of the construction of this project.

This current study included:

- A background records search and literature review to determine if any known archaeological sites were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- A search of the NAHC *Sacred Lands File* to determine if any traditional cultural places or cultural landscapes have been identified within the area with outreach letters sent and follow-up calls made to the NAHC tribal contact list;
- An on-foot, intensive inventory of the Project APE 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.

This study was conducted by ASM Affiliates, Inc., of Tehachapi, California, with David S. Whitley, Ph.D., RPA, serving as principal investigator. Fieldwork was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A. Personnel resumes are provided in Confidential Appendix A.

This manuscript 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; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the Project APE.

1.1 PROJECT LOCATION, DESCRIPTION, AND APE

The proposed Project is located on the south side of Earlimart in Section 4, Township 24 South, Range 25 East, Mount Diablo Base and Meridian (Figure 1). The Project is located in a small, fenced area between Highway 99 on the east and the Southern Pacific Railroad on the west. More broadly, the Project is located on the open flats of the San Joaquin Valley, a large interior and relatively low-lying valley that drains northwards to the San Francisco Bay. While the study area is a significant distance from the Pacific Ocean, the elevation is only about 285 feet (ft) above mean sea level (amsl).

The proposed Project consists of the installation of treatment equipment on an undeveloped portion of an existing well site. The APE for the project was defined as area of ground-surface disturbance

including staging, lay-down, and work areas. The horizontal APE was defined as the existing well site, which is fenced and totals approximately 0.2-ac. The vertical APE, defined as the maximum depth of excavation for foundations and footings, was 10-ft.

1.2 REGULATORY CONTEXT

1.2.1 National Historic Preservation Act

The NHPA of 1966, as amended (54 United States Code § 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 and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800 describes the process that the federal agency shall take to identify cultural resources and assess the level of effect that the 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.

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 referred to as historic properties. The criteria for NRHP eligibility are outlined at 36 CFR Part 60. Other applicable federal cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA).

Compliance with Section 106 of the NHPA (36 CFR Part 800) follows a series of steps that are designed to identify and consult with interested parties, determine the APE, determine if historic properties are present within the APE, and assess the effects the undertaking will have on historic properties. Section 106 requires consultation with Indian Tribes concerning the identification of sites of religious or cultural significance and with individuals or groups who are entitled, or requested, to be consulting parties. The regulations at 36 CFR Part 800.5 require federal agencies to apply the criteria of adverse effect to the historic properties identified within the APE. The criteria of adverse effect, defined at 36 CFR Part 800.5(a)(1), states that:

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

The 36 CFR Part 800 regulations include consultation with the State Historic Preservation Officer (SHPO) to provide an opportunity to comment on, and concur with, a federal agency's determinations. If the undertaking would result in adverse effects to historic properties, these

adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking can proceed to implementation.

1.2.2 National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archeology, engineering, and culture. A district, site, building, structure, or object must:

> (A) be associated with events that have made a significant contribution to the broad patterns of history; or,
>
> (B) be associated with the lives of people significant in our past; or,
>
> (C) embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or 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 site must have integrity and meet one of the 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 the history or prehistory 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 prehistory 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.

1.2.3 California Environmental Quality Act

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 impacted, 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, Sections § 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.

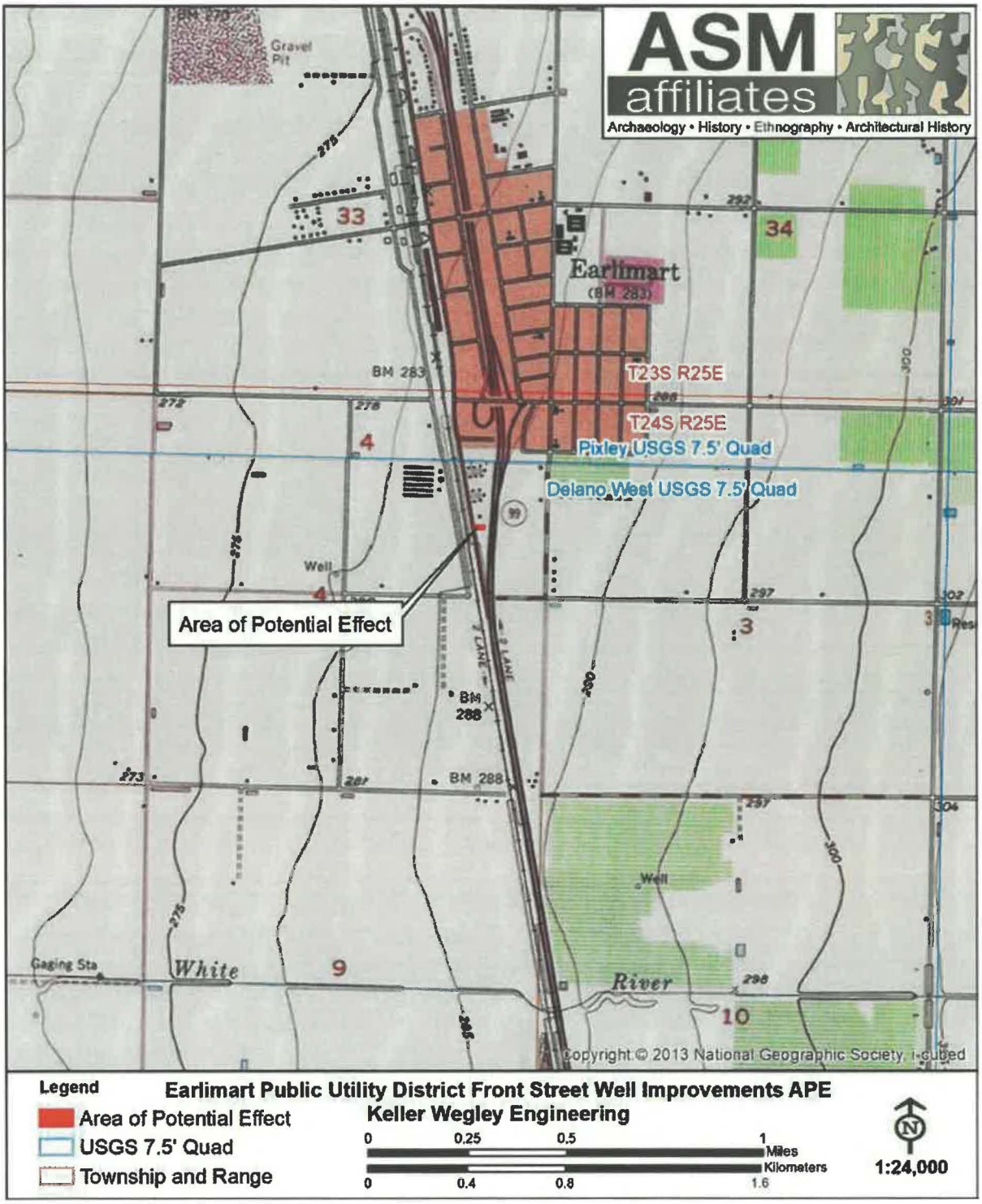

Figure 1. Location of the Front Street Well Improvements APE, Tulare County, California.

2. ENVIRONMENTAL AND CULTUAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

At the time of the Class III Inventory/ Phase I survey, the study area consisted of an existing well and a small undeveloped area (Figure 2a and 2b). Although this location currently may be characterized as a dry open valley bottom, historically it may have included swampy lands, lying roughly 14-mi east of the historical Tule Lake shoreline, and dry valley grassland with possible oak groves. Prior to changes resulting from the agricultural development of the area, Deer Creek, located approximately 2.7-mi north of the APE, was an effective divide between mesic environments to the north and more xeric environments to the south (Preston 1981:80). Lying to the south of Deer Creek, the Project APE would have been on the drier side of the Deer Creek alluvial fan. Deer Creek, and White River approximately 1.9-mi south, may have been occasionally inundated by floodwaters during heavy spring snowmelt, but in most years these drainage would have been perennial in their upper reaches and intermittent lower on their courses (Preston 1981:17), nearer the APE.

Historical and recent land-use has thus changed the vegetation that was once present within and near the Project APE. Prior to development, oak groves and valley grasslands would have dominated (Preston 1981:70). However, it is likely that Riparian Woodlands were once found along local drainages, including along Deer Creek and White River (see Schoenherr 1992)

2.2 GEOARCHAEOLOGICAL CONTEXT

The project is located on the San Joaquin Valley flats, a deep basin that has been filled primarily with sediment originating in the Sierra Nevada to the east. More accurately, the project is located on the Deer Creek alluvial fan, which itself is broad and, in the immediate project area, gentle in slope. Preston (1981:17) describes the geomorphological and hydrological setting as follows:

> "The lower distributaries and sloughs are barely deep enough to contain ordinary spring run-off, and localized flooding occurs annually. White River and Deer Creek are smaller still. Like the Tule [River], both are downcutting in their upper reaches, and both are barely perennial even in the foothills. White River and Deer Creek ordinarily disappear underground within ten to twelve miles of their entry into the basin, even during springtime, but occasional floods have carried their waters to Tulare Lake. The fans deposited by these streams are steeper than the Tule River fan."

The implications are, first, that the project area historically and prehistorically was a dynamic geomorphological environment, at least periodically, due to seasonal flooding. No records are known that allow us to estimate the impact this flooding may have had on the landscape but, due to changing climatic conditions prehistorically, this is likely to have varied over time, with greater dynamism occurring during wetter periods. The existing topography in the general region, however, provides some indication of how the landscape has been changed by seasonal flooding

events. The 1892 "Thompson Map of Tulare County" shows the "Old Channel" of Deer Creek heading north from the current stream channel, creating what appears to have been an oxbow, to the east of the project area. The "Old Channel" is still shown on current USGS topographical quadrangles, and it apparently has not carried water for over a century. At some point in the past the stream straightened its course and eliminated this earlier, meandering course, suggesting that relatively recent hydrological events have been of sufficient magnitude to move the channel southwards to its current location. The course of the river, in other words, has been historically unstable, indicating that the current land-surface is youthful in age.

Second, this occasional flooding has sporadically inundated the area, depositing alluvial soils. Storie et al (1942) characterize the Deer Creek region, in fact, as an outwash plain and describe the deposited soils as recent (and pedologically-undeveloped) sandy loam or fine sandy loam with permeable subsoils.

Third, while occasional flooding along Deer Creek has blanketed the area with alluvium, surface water was only present sporadically—during floods. As noted by Storie et al (1942:3), normal surface flows along Deer Creek effectively ended at Terra Bella, east of the study area.

Fourth, due to the limitations the lack of surface water had on prehistoric and historic human settlement, it is unlikely that the project area experienced more than sporadic human use prior to the Euro-American period. Earlier use most likely consisted of occasional hunting and gathering but not inhabitation. This supposition is supported by the distribution of known ethnographic villages, the closest of which was the Koyete Yokuts hamlet of *Chetetik Nowsuh* (Latta 1977:196). This is located on Deer Creek miles northeast of the project, near where the creek exits the foothills. Other ethnographic villages likewise are located primarily on streams near the foothills, or along the shores of Tulare Lake.

A Caltrans geoarchaeological study that included the Project area classified this location as having Moderate sensitivity for subsurface sites (Meyer et al. 2010). This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in 7 ordinal classes for sensitivity for buried soils, from Very Low to Very High. Given the Project area's moderate sensitivity for buried deposits according to this analysis, its distance from known centers of prehistoric occupation, and the previously disturbed nature of the location, it is unlikely that the Project APE would contain subsurface archaeological deposits.

Based on these factors and conditions, the Project area is considered to have a low to moderate archaeological sensitivity, with limited potential for subsurface archaeological remains.

Figure 2a. Overview of existing well with concrete platform, looking southwest.

Figure 2b. Overview of undeveloped portion, looking west.

2.3 ETHNOGRAPHIC CONTEXT

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. Kroeber (1925) places the western extent of the Deer Creek area in Wowol territory, with the closest listed village at Porterville, and the eastern portion of Deer Creek and White River at the foothills, near the Project area, in Koyeti territory. Latta (1977:195-196) also places the Project area with the Koyete (Koyeti in Kroeber [1925]). As noted above, he identifies the closest Koyete village as *Chetetik Nowsuh*, near Terra Bella, northeast of the Project area.

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 continue to live in Tulare, Fresno and Kings counties to this day.

2.4 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The 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 prehistory 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 prehistory 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 YBP (years before present). 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. (In each case, these are locations many miles distant from the study area.)

Both fluted and stemmed points are particularly common around the Tulare 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 west of the Project APE, 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 7,500 to 4,000 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 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period known climatically as the Holocene Maximum (circa 3,800 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 Windmiller 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 1,500 BP 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 3,500 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 1,500 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, northwest 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 San Joaquin Valley prehistory 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 nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric 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.

2.5 HISTORIC CONTEXT

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. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, 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 one such 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 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).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (three feet wide by two feet deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles, and their impacts were widespread. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System (http://en.wikipedia.org/wiki/Henry_Miller(rancher). They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/).

Numerous private irrigation systems were initially developed by individuals. The earliest such improvement in the general project area was the "Saucelito Ditch," which is shown on the 1892 "Thompson Map of Tulare County" running south of and parallel to Deer Creek. The Wright Act of 1887, however, allowed the creation of public irrigation districts, greatly facilitating the funding and construction of water conveyance systems. With increasing demand, the Central Valley Project (CVP) was developed to supply water to Fresno, Tulare and Kern counties. Friant Dam, which created Millerton Lake, was completed in 1942 and supplies water for the Friant-Kern and

Madera Canals. The Friant-Kern Canal was constructed between 1945 and 1951 and is approximately 152 miles in length.

Alila, as Earlimart was originally known, was established in 1880. In 1910, the current name of Earlimart was adopted, highlighting the fact that crops ripened early in the region and could be taken "early to market." The Earlimart Public Utility District was established in 1954 to provide water for residents of Earlimart. The Front Street Well was drilled in 1989 (Tulare County Resource Management Agency Economic Development and Planning Branch 2017).

2.6 RESEARCH DESIGN

2.6.1 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 prehistoric 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 4,000 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 delta 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 Tulare Lake was relatively stable, because it abutted the Kettleman Hills. 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 then hardest to predict in the open valley floor, where changes in stream courses and lake levels occurred on numerous occasions.

Nonetheless, the position of San Joaquin Valley prehistory 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 prehistoric demographic trends for the San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Archaeological sites would primarily be evaluated for NRHP eligibility under Criterion D, research potential.

2.6.2 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.

2.6.3 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. Caltrans has also identified an evaluation matrix to aid in 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); 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).

For agricultural sites, most likely to be pertinent to the Project APE, Caltrans (2007) has identified six themes to guide research: Site Structure and Land Use Pattern; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Expected site types would include farm and ranch homesteads and facilities, line camps, and refuse dumps. In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. However, they also potentially could be eligible under Criteria A and B for their associate values with major historical trends or individuals. Historical landscapes might also be considered. Historical structures are typically evaluated for NRHP eligibility under Criteria A and/or B, for their associative values with major historical trends or individuals, and C for potential design or engineering importance.

3. ARCHIVAL RECORDS SEARCH

An archival records search was conducted at the California State University, Bakersfield, Southern San Joaquin Valley Information Center (SSJVIC), by SSJVIC staff members to determine: (i) if prehistoric or historical archaeological sites 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. Additionally, a search of the NAHC *Sacred Lands File* was conducted in order to ascertain whether traditional cultural places or cultural landscapes had been identified within the APE. The results of this archival records search are summarized here and are available in Confidential Appendix A.

According to records search results, no previous archaeological surveys had been completed within the APE, and no cultural resources are known to exist within it. Four previous archaeological surveys (Table 1) had been completed within 0.5-mi of the APE, resulting in the recording of a historic structure: P-54-004626, the Southern Pacific Railroad.

Table 1. Survey Reports Within 0.5-Mi of the APE.

Report No	Year	Author (s)/Affiliation	Title
TU-00102	1995	B Hatoff et al/ Woodward-Clyde Consultants	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project
TU-00379	1988	J Miller/ Peak & Associates, Inc.	Cultural Resource Assessment of the Earlimart Senior Apartments, Tulare County, California
TU-01324	2006	C Arrington/ SWCA Environmental Consultants	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California
TU-01549	2011	RS Orfila/ RSO Consulting, Cultural and Historical Resource Management	Archaeological Survey of Project Area for the Southern California Edison Company: Replacement of a Power Pole (#256821E) Located Near Earlimart in Tulare County; Circuit: Logan 12kV; Substation Earlimart (IO317718/TD492461 RSOC Consultant Work Authorization No. 5)

A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed on August 26th, 2020. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the study area (Appendix A). Outreach letters were sent on September 17th, 2020, and follow-up emails were sent on October 13th, 2020 to tribal organizations on the NAHC. No responses were received from contacted tribes.

4. METHODS AND RESULTS

An intensive Class III inventory/Phase I survey of the 0.2-ac Front Street Well Improvements APE was conducted on October 16th, 2020 by ASM Associate Archaeologist Robert Azpitarte, B.A. The APE was examined with the field crew walking parallel transects space at approximately 5-m intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil); 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, using DPR 523 forms. Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains.

The study area consists of a fenced area containing the existing Front Street Well on a concrete pad foundation, constructed in 1989, and an undisturbed area, which will be the location for the improvements.

4.1 SURVEY RESULTS

No cultural resources of any kind were identified during the survey

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III inventory/Phase I cultural resources survey was conducted for the Earlimart Public Utility District Front Street Well Improvements Project, located in Earlimart, Tulare County, California. A records search of site files and maps was conducted at the SSJVIC and a search of the NAHC *Sacred Lands File* was completed. No Native American sacred sites or cultural landscapes had been identified within or immediately adjacent to the study area, and no archaeological sites had been recorded within the study area.

The survey fieldwork of the 0.2-ac APE was conducted October 16th, 2020 with parallel transects spaced at approximately 5-m intervals walked across the APE. No cultural resources of any kind were identified during the inventory of the 0.2-ac study area.

5.1 RECOMMENDATIONS

An intensive Class III inventory/Phase I survey demonstrated that the 0.2-ac Front Street Well Improvements Project APE lacks significant archaeological and/or historical resources. The proposed project therefore does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. A finding of No Significant Impacts/No Historic Properties Affected is recommended for the Project.

In the unlikely event that previously unknown cultural resources are identified during the development or use of the study area, all project activities must cease in the area of the find and a qualified archaeologist must be notified to evaluate the discovery and implement appropriate evaluation and/or protection measures.

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APPENDIX E

SOILS BORINGS

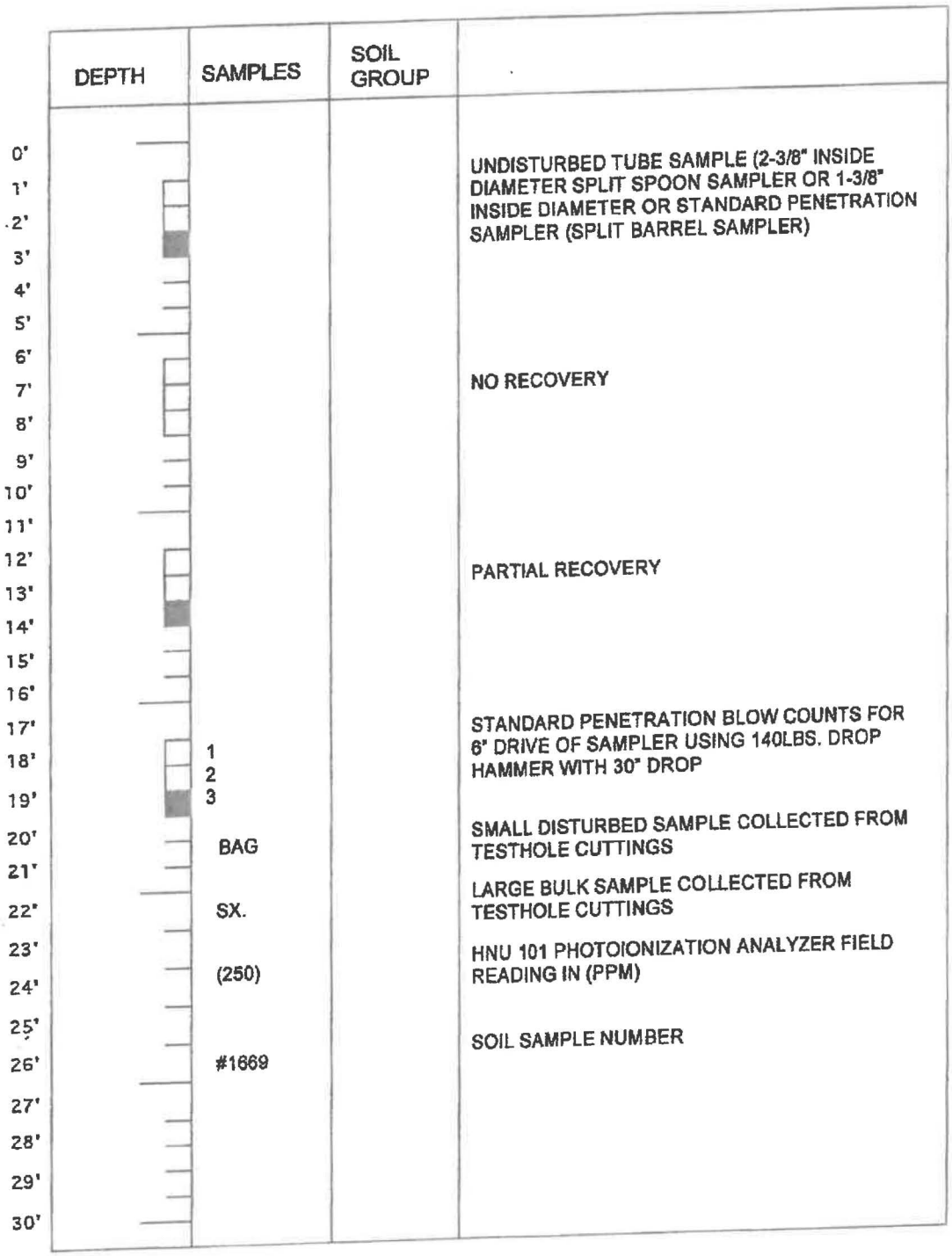
FRONT STREET WELL

IMPROVEMENTS PROJECT

EARLIMART PUBLIC UTILITY DISTRICT

LOCATION MAP	Scale: NTS	Date: October 1, 2020	CTL
Soil Investigation **Earlimart PUD** **Front Street Well Improvements** **Earlimart, CA**	Drawn by: Google Maps: JK	Approved by: SE	***Consolidated Testing Laboratories, Inc.***
	Project No. E2857-20	Figure No. 1	

TEST BORING LOG LEGEND



CTL CONSOLIDATED TESTING LABORATORIES, INC.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

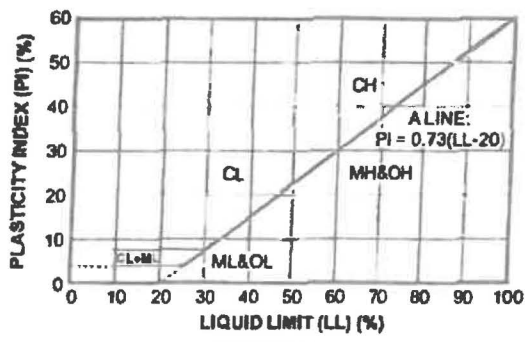
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



PROJECT: Soil Investigation
Earlimart PUD
Front Street Well Improvements
Earlimart, CA

CTL, INC.
710 S. Kaweah Avenue, Exeter, Ca
559-592-3555 Fax 559-592-3553

JOB NO.: E2857-20
DATE: 10/1/20
BY: JK

BORING LOG NUMBER B1

DEPTH	%REC	BLOW COUNTS	SAMPLE NO.	SOIL GROUP	SOIL DESCRIPTION	CPC TYPE	DRY DENSITY
0'							
		21 14 16	2.5	CL-ML	0-4' Sandy Silty Clay; dark yellowish brown; fine to coarse sand fraction; low plasticity		
				ML	4-8' Sandy Silt; dark yellowish brown; fine to coarse sand fraction; subangular; cohesive; hard drilling		
5'		50	2.5				
				SC	8-14' Clayey Sand; yellowish brown; fine to medium sand fraction; moist; loose		
10'		4 4 7	1.5				
				SM	14-15' Silty Sand; yellowish brown; moist; fine to coarse sand fraction; occasional coarse subangular to subrounded sand grains; loose		
				ML	15-19' Clayey Sandy Silt; dark yellowish brown; moist; fine grained sand		
15'		4 16 22	1.5				
				SC	19-21' Clayey Sand; yellowish brown; moist; fine to medium sand fraction		
				ML	21-25' Clayey Silt; yellowish brown; fine to medium sand fraction; subrounded to subangular cohesive		
20'		5 5 8	1.5				
				SP	25-29' Sand; yellowish brown; fine to coarse; subangular; loose		
				SM	29-30' Silty Sand; dark yellowish brown; moist; fine to coarse sand fraction; subangular; reddish mottling throughout		
		6 9			30-30.5'		
25'		12		ML	Sandy Silt; dark grayish, yellowish brown; fine to medium sand fraction; cohesive		
					Terminated Drilling at 30.5' No freestanding groundwater encountered		
		4 6 8					
30'							

LOCATION: B1(see location map)
EQUIPMENT: Mobile B-80 drill rig w/ 7"O.D. hollow stem augers and 2.5" I.D. Split spoon sampler and 1.5" ID SPT sampler

PROJECT: Soil Investigation
Earlimart PUD
Front Street Well Improvements
Earlimart, CA

CTL, INC.
710 S. Kaweah Avenue, Exeter, Ca
559-592-3555 Fax 559-592-3553

JOB NO.: E2848-20
DATE: 10/1/20
BY: JK

BORING LOG NUMBER B2

DEPTH	%REC	BLOW COUNTS	SAMPLE NO.	SOIL GROUP	SOIL DESCRIPTION	CPC TYPE	DRY DENSITY
0'		11 16 20	2.5	CL	0-4' Sandy Clay; dark yellowish brown; dry; fine to coarse sand fraction; low plasticity		
5'		4 7 15	2.5	ML	4-9.5' Sandy Silt; dark yellowish brown; moist; fine to coarse sand fraction; subrounded to subangular grains		
				CL	9.5-14' Silty Clay; dark yellowish brown with reddish mottling throughout; moist; fine to medium sand fraction; low plasticity		
10'		3 3 6	2.5	SM	14-15' Silty Sand; pale brown; moist; fine to medium with trace coarse sand fraction; loose		
				SM	15-19.5' Silty Sand; dark yellowish brown; moist; fine to medium sand fraction; firm		
15'		8 21 40	1.5	SC	19.5-24' Clayey Sand; strong brown; moist; fine to coarse sand fraction; subrounded		
				ML	24-24.5' Sandy Silt; dark yellowish brown; moist; fine to coarse sand fraction; subrounded		
20'		3 5 5	1.5	CL	24.5-25' Sandy Clay; dark yellowish brown; moist; fine to medium sand fraction; rounded; low plasticity		
				ML	25-29.5' Sandy Silt; dark yellowish brown; fine to coarse; rounded; reddish mottling throughout		
25'		3 4 4	1.5	SP	29.5-30.5' Sand; brownish yellow, moist; medium to coarse sand fraction		
30'		6 11 15	1.5		Terminated drilling at 30.5' No freestanding groundwater encountered		

LOCATION: B2(see location map)

EQUIPMENT: Mobile B-80 drill rig w/ 7"O.D. hollow stem augers and 2.5" I.D. Split Spoon Sampler and 1.5" I.D. SPT Sampler

APPENDIX F

FLOOD HAZARD MAP

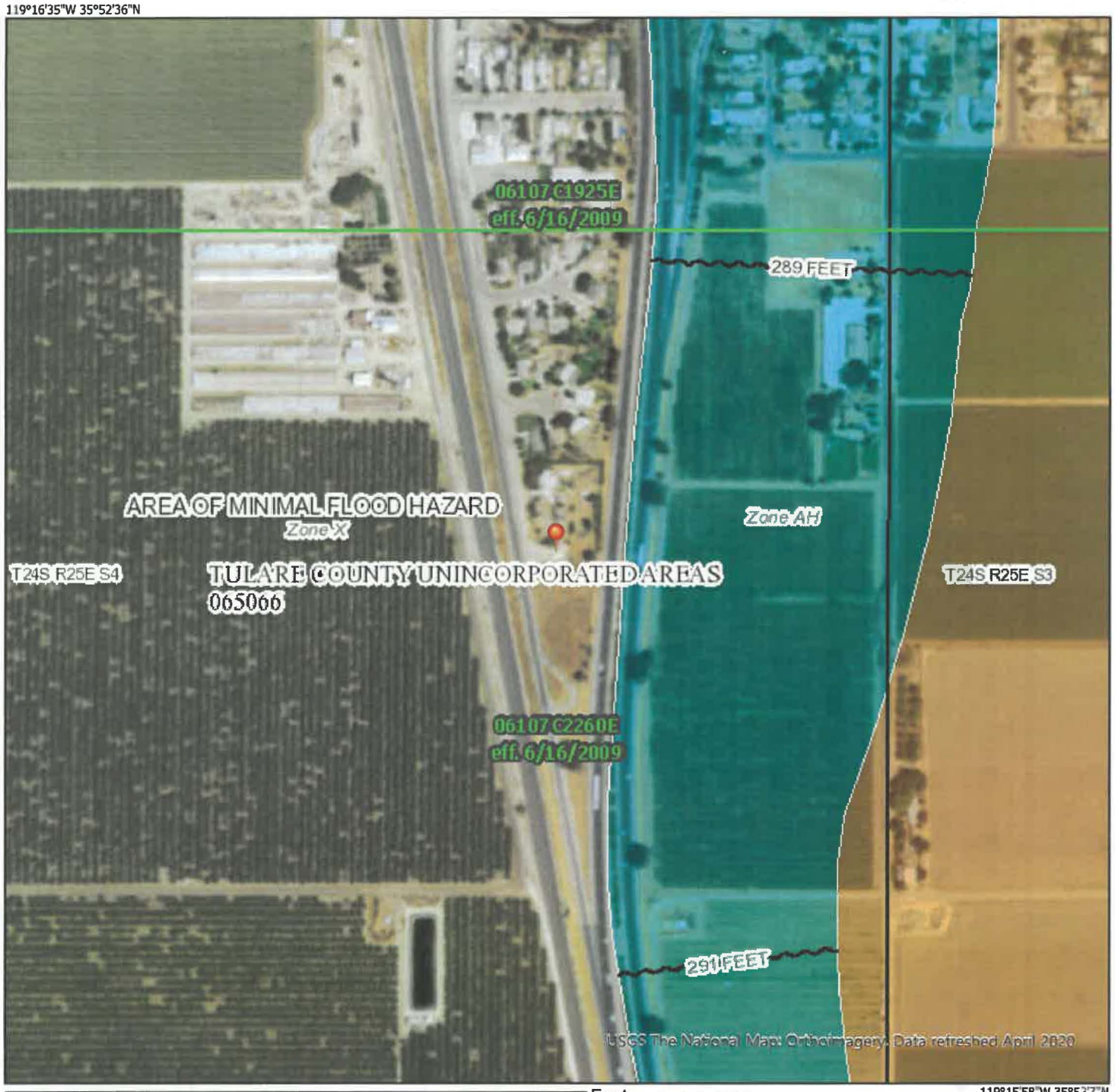
FRONT STREET WELL

IMPROVEMENTS PROJECT

EARLIMART PUBLIC UTILITY DISTRICT

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/11/2020 at 5:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.