Initial Study and Mitigated Negative Declaration

Dunlap Drive Recycled Water Pipeline Replacement Project

Prepared for

Eastern Municipal Water District
2270 Trumble Road
Perris, California 92572
Contact: Joe Broadhead
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Prepared by

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Santa Ana, California 92707
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November 2021

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ACRONYM LIST

AAM	Annual Arithmetic Mean
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ALUCP	Airport Land Use Compatibility Plan
AOS	American Ornithological Society
AWWA	American Water Works Association
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
Biological Resources Assessment	Biological Resources Assessment for the Eastern Municipal Water District Murrieta Road Transmission Pipeline Project
BMP	Best Management Practice
BSC	Building Standards Code
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAP	Climate Action Plan
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	methane
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
City	City of Perris
cm	centimeter
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPHI	California Points of Historical Interest
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
Cultural Resource Study	Cultural Resource Study for the Eastern Municipal Water District Murrieta Road Transmission Pipeline Project
cy	cubic yards
dBA	decibels
diesel PM	diesel particulate matter
DOC	Department of Conservation
DOE	Determinations of Eligibility
EDR Report	EDR Radius Map™ Report
EIC	Eastern Information Center

EIR	Environmental Impact Report
EMFAC	EMissions FACtor
EMWD	District
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FUDS	Formerly Used Defense Site
GHG	greenhouse gas
GPS	global positioning system
GWP	global warming potential
HFC	hydrofluorocarbons
HPDF	Historic Property Data File
I	Interstate
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
km	kilometer
lf	linear feet
LOS	level of service
LST	localized significance threshold
m	meter
MBTA	Migratory Bird Treaty Act
MEI	maximally exposed individual
mg/m^3	milligrams per cubic meter
PMC	City of Perris Municipal Code
MRZ-3	Mineral Resource Zone-3
MRZ-4	Mineral Resources Zone 4
MSHCP	Multiple Species Habitat Conservation Plan
MT/yr CO_2e	metric tons per year of carbon dioxide equivalents
$MTCO_2e$	metric tons of CO_2 equivalent
$MTCO_2e/yr$	metric tons of CO_2 equivalent per year
NAHC	Native American Heritage Commission
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
N_2O	nitrous oxide
NO	nitric oxide
NO_2	nitrogen dioxide
O_3	ozone
OHP	Office of Historic Preservation
Perris General Plan EIR	City of Perris General Plan Draft Environmental Impact Report
PFC	perfluorocarbons
PM2.5	fine particulate matter with a diameter of 2.5 microns or less

PM10	respirable particulate matter with a diameter of 10 microns or less
PMC	Perris Municipal Code
ppm	parts per million
PVRWRF	Perris Valley Regional Water Reclamation Facility
RECP	rolled erosion control product
ROW	right of way
RTA	Riverside Transit Agency
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SCCIC	South Central Coastal Information Center
SF_6	sulfur hexafluoride
SNMNH	Smithsonian National Museum of Natural History
SO_2	sulfur dioxide
SoCAB	South Coast Air Basin
SR	State Route
SSC	California Species of Special Concern
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminates
$\mu g/m^3$	micrograms per cubic meter
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WSC	Western Science Center

SECTION 1.0 INTRODUCTION

1.1 PURPOSE OF THE INITIAL STUDY

The purpose of this Initial Study (IS) is to (1) describe the proposed Dunlap Drive Recycled Water Pipeline Replacement Project (hereinafter referred to as the "Project"), which would be constructed in the City of Perris and (2) provide an evaluation of potential environmental impacts associated with the Project's construction and operation. The Project involves the construction and operation of replacement pipeline, and all associated connections, for continued conveyance of recycled water through the Eastern Municipal Water District's (District's) Recycled Water Pipeline System from the Perris Valley Regional Water Reclamation Facility (PVRWRF). This IS has been prepared pursuant to the California Environmental Quality Act (CEQA), as amended (Section 21000 et. seq. of the *Public Resources Code*) and in accordance with the State CEQA Guidelines (Section 15000 et. seq. of the *California Code of Regulations*).

Pursuant to Section 15367 of the State CEQA Guidelines, the District is the lead agency for the Project. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect on the environment. The District, as the lead agency, has the authority for Project approval and certification of the accompanying environmental documentation.

1.2 SUMMARY OF FINDINGS

Based on the environmental checklist form prepared for the Project and supporting environmental analysis (Section 4.0), the proposed Project would have no impact or less than significant impacts in the following environmental areas: aesthetics, agricultural and forestry resources, air quality, energy, greenhouse gas emissions, hazards and hazardous materials, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire. The proposed Project has the potential to have significant impacts on the following topics unless the recommended mitigation measures described herein are incorporated into the Project: biological resources, cultural resources, geology and soils, hydrology and water quality, and tribal cultural resources.

According to the State CEQA Guidelines, it is appropriate to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Project because, after incorporation of the recommended mitigation measures, potentially significant environmental impacts would be eliminated or reduced to a level considered less than significant.

1.3 PROJECT APPROVAL

This IS/MND has been submitted to potentially affected agencies and individuals. Notices of the availability of the IS/MND for review and comment as well as the environmental documentation are available on the District's website (http://www.emwd.org) for review.

A 30-day public review period has been established for the IS/MND. The review period has been established in accordance with Section 15073 of the State CEQA Guidelines. During review of the IS/MND, affected public agencies and the interested public should focus on the document's adequacy in identifying and analyzing the potential environmental impacts and the ways in which the potentially significant effects of the Project area can be avoided or mitigated. Comments on

the IS/MND and the analysis contained herein must be received by 5:00 PM on November 29, 2021, and should be addressed to:

Eastern Municipal Water District
Attention: Joseph Broadhead
P.O. Box 8300
Perris, California 92572-8300

Following receipt and evaluation of comments from agencies, organizations, and/or individuals, the District will determine whether any substantial new environmental issues have been raised. If so, further documentation—such as an Environmental Impact Report (EIR) or an expanded IS/MND—may be required. If not, the Project and the environmental documentation are tentatively scheduled to be submitted to the District Board of Directors for consideration.

1.4 ORGANIZATION OF THE INITIAL STUDY

The IS/MND is organized into sections, as described below.

- **Section 1.0: Introduction.** This section provides an introduction and overview of the conclusions in the IS/MND.
- **Section 2.0: Project Location and Environmental Setting.** This section provides a brief description of the Project location, relevant background information, and a description of the existing conditions of the Project alignment and vicinity.
- **Section 3.0: Project Description.** This section provides a description of the proposed Project, a statement of purpose and need, and necessary discretionary approvals.
- **Section 4.0: Environmental Checklist.** The completed Environmental Checklist Form from the State CEQA Guidelines provides an overview of the potential impacts that may or may not result from Project implementation. The Environmental Checklist Form also includes “mandatory findings of significance”, as required by CEQA.
- **Section 5.0: Report Preparers.** This section lists the authors, including staff from the District, who assisted in preparing and reviewing the IS/MND.
- **Section 6.0: References.** This section identifies the references used to prepare the IS/MND.

SECTION 2.0 PROJECT LOCATION AND ENVIRONMENTAL SETTING

2.1 PROJECT LOCATION

The proposed Project involves construction of replacement pipe for a recycled water pipeline in the City of Perris ("City"). As depicted on **Exhibit 2-1 Regional Location and Local Vicinity**, the proposed section of pipeline alignment is located parallel to the existing pipeline and Dunlap Drive. The replacement pipe would measure 2,000 linear feet [lf] in length and would extend north from Ellis Avenue between Vector Road to the east and Interstate (I) 215 underpass to the west, past the future Santa Rosa Road, and end approximately 400 feet north of the San Jacinto River crossing. The Project alignment is located within the Township CA T4S, Range R3W, Sections 33.

2.2 PROJECT BACKGROUND

The District has been treating wastewater (sewer) within its service area since the 1960s. The District's recycled water system currently receives and treats more than 45 million gallons of wastewater each day at its four operating regional treatment plants. The treated water is then distributed throughout the service area, through more than 200 miles of recycled water pipeline. The Dunlap Drive Recycled Water Pipeline, originally constructed in 1988, is approximately 3.8 miles long conveying recycled water from the PVRWRF to the District's 900-acre North Trumble Road Recycled Water Storage Pond. Construction of the proposed replacement pipeline would allow for continued conveyance of recycled water through the District's Recycled Water Pipeline System.

Existing Conditions

The 2,000 lf pipeline alignment would be located generally parallel to the existing pipeline and within the District's existing 30-foot-wide easement within Dunlap Drive. The pipeline replacement would extend from Ellis Avenue south of the Project, running past the future Santa Rosa Road and San Jacinto River crossing to approximately 400 feet north of the river crossing. The Project alignment is located in an area previously used for agriculture. Nearby surrounding land uses mainly include farmland and undeveloped disturbed land. In addition, the Riverside Radio Control Club Flying Field is located approximately 0.18 miles northwest of the Project. Finally, urban development exists with residential uses located 0.66 miles east of the Project alignment. As previously discussed, the Project would extend north of the San Jacinto River, which bisects the pipeline alignment in a generally east-west direction.

All pipeline segments would be constructed within the existing easements and rights-of-way (ROW). his easement area is comprised of unpaved ground, either bare or with existing disturbed vegetation, adjacent and generally parallel to the existing pipeline and the unpaved Dunlap Drive. There is no curb, gutter, or other infrastructure apparent in the easement area.



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Regional Location and Local Vicinity

Exhibit 2-1

Dunlap Drive Recycled Water Pipeline Replacement Project

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SECTION 3.0 PROJECT DESCRIPTION

3.1 PURPOSE

The purpose of the proposed Project is the construction of replacement pipeline and all associated connections to continue to convey recycled water from the District's PVRWRF to North Trumble Road Recycled Water Storage Pond located near San Jacinto Avenue and Pico Avenue. The existing pipeline has experienced corrosion and leaks, particularly in the 2,000 lf of line located along Dunlap Drive, north of Ellis Avenue and south of San Jacinto Avenue, and specifically near the San Jacinto River crossing. Two recent leaks have been observed, one north of the intersection of Ellis Road and Dunlap Drive, and one just south of the San Jacinto River. The 2,000 lf of pipeline in this Project area has experienced higher amounts corrosion and has been determined to require replacement. The 2,000 lf proposed 36- to 42-inch-diameter cement mortar lined and coated steel pipeline replacement will be located within the easements along Dunlap Drive. Once new pipeline replacement is constructed and operational, the proposed Project would continue water conveyance for the 3.8-mile Dunlap Road Pipeline. A full environmental assessment is provided in this IS.

3.2 PHYSICAL CHARACTERISTICS

3.1.1 PIPELINE ALIGNMENT

The Project includes installation of approximately 2,000 lf of 36-inch pipeline, extending along Dunlap Drive from Ellis Avenue (between Vector Road to the east and I-215 underpass) in the south, past the future Santa Rosa Road, and ending north of the San Jacinto River crossing for approximately 400 feet (**Exhibit 3-1 Aerial Photograph**).

The majority of the planned replacement pipeline would be 36-inches in diameter including the pipeline segment crossing the San Jacinto River which would be encased within a 48-inch casing for protection (**Exhibit 3-2 Proposed Pipeline Alignment Plan)**. The larger pipeline crossing San Jacinto River allows for a jack-and-bore installation beneath the river crossing. All pipeline segments would be constructed within an expanded utility easement.

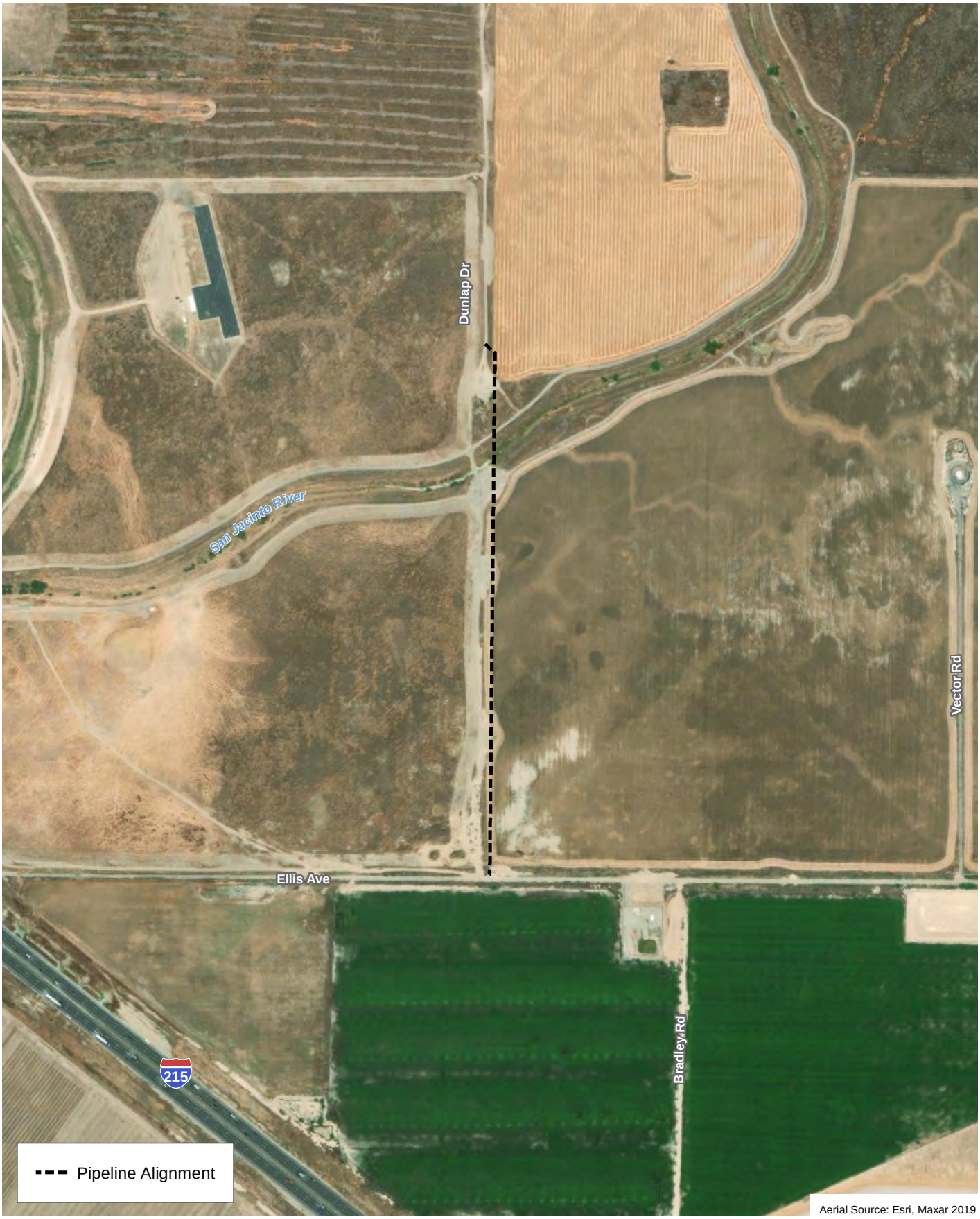
The exact positioning of the proposed pipeline would be determined after thorough consideration of hydraulic requirements, clearances from existing utilities, ROW width, and Record of Survey Documents; however, it would not extend outside of the utility easement and potential 30-foot easement expansion.

3.1.2 WATER MAIN CONNECTIONS

The proposed Project would include a parallel replacement pipeline within the easement. The replacement line would be installed while the existing pipe is operational. A short term shut down would be required to connect the new section of pipe into the existing line. The replacement could potentially be completed with a parallel pipe without the use of bypass piping.

3.3 CONSTRUCTION ACTIVITIES AND PROJECT COMPONENTS

Construction methods used to install the pipeline would primarily include open-cut-trenching method; however, a jack-and-bore method would be used at the San Jacinto River crossing. (**Exhibit 3-2 Proposed Pipeline Alignment Plan)**. Approximately 6,000 cubic yards (cy) of earthwork would be necessary for the proposed Project. If the contractor determines that rock breaking activities are required during construction, the Project would use non-explosive demolition methods (i.e., mechanical means via a hoe ram) to fracture the bedrock with minimal



Aerial Source: Esri, Maxar 2019

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Aerial Photograph

Exhibit 3-1

Dunlap Drive Recycled Water Pipeline Replacement Project

N W E S

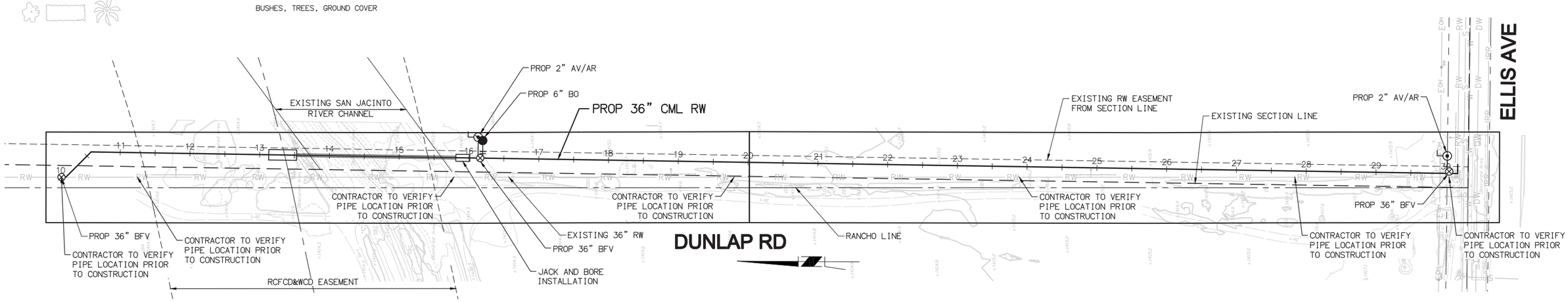
500 250 0 500 Feet

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LEGEND

EXISTING	PROPOSED	DETAIL	
	⊗	B-577	CLOSED VALVE
			6" FIRE HYDRANT
H	H		FxH ADAPTER
W W			WATER MAIN
RW RW			RECYCLED WATER MAIN
EOH			ELECTRIC (OVERHEAD)
E E			ELECTRIC (UNDERGROUND)
CATV			CABLE TELEVISION (OVERHEAD)
G G			GAS
T T			TELEPHONE (OVERHEAD)
UGT			TELEPHONE (UNDERGROUND)
S			SANITARY SEWER
○			MANHOLE
℄			STREET CENTERLINE
			PROPERTY LINE
			RIGHT-OF-WAY
			EASEMNT LINE
			SECTION LINE
			RANCHO LINE
			EDGE OF PAVEMENT
X			FENCE
PP			POWER POLE
			BUSHES, TREES, GROUND COVER



Source: Michael Baker International, 2020

Proposed Pipeline Alignment Plan

Exhibit 3-2

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

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disturbance. The original pipeline would be slurry filled and remain in place. The Project would be constructed in conformance with applicable engineering standards, including current versions of the American Water Works Association (AWWA).

Construction equipment laydown and staging would occur in two locations: 1) within an easement of land (APN-310-220-056 and APN-310-260-027) to be obtained along Ellis Avenue at Dunlap Drive between Vector Road and the I-215; and 2) along the Project alignment. Both of these areas have been included in the overall analysis and are assumed for disturbance associated with the Project.

Construction is anticipated to begin in the second quarter of 2022 and last for a 180-day period. The completed Project would be operational approximately six months from the end of construction, or in the first quarter of 2023.

As part of the Project, a Traffic Control Plan would be submitted to the City of Perris for approval. Excavation areas within the ROW would be plated during non-working hours. Project-related trips would include daily construction worker trips and occasional material delivery and haul truck trips. Appropriate traffic control measures would be implemented as necessary in pertinent areas to maintain access and ensure safety. Such measures would likely include standard efforts such as the use of cones, barriers, signs, and flaggers, where applicable.

3.4 OTHER APPROVALS

This IS/MND is intended to serve as the primary CEQA environmental document for all actions associated with the proposed Project, including all other approvals beyond the District's authority needed to implement the Project.

The following approvals are anticipated to be required prior to Project construction/operation:

- **California Occupational Safety and Health Administration.** Trenching/Shoring Permit
- **City of Perris.** Encroachment Permit
- **Riverside County Flood Control and Water Conservation District:** Encroachment Permit
- **Occupational Health and Safety Administration.** Mining and Tunnel Classification
- **Santa Ana Regional Water Quality Control Board.** Construction Activities, Stormwater, Dewatering, and General Permit

SECTION 4.0 ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

☒ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☒ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☒ 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 be 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 al 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.

Al Javier Digitally signed by Al Javier Date: 2021.11.01 14:30:53 -07'00'

Signature

11/1/2021

Date

Al Javier

Printed Name

Eastern Municipal Water District

For

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analysis," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

I. AESTHETICS

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒

No Impact. As described in detail in Section 2.0, the Project Pipeline Alignment area is comprised of unpaved ground, either bare or with existing disturbed vegetation. Exhibits 4-1a-d provide photographs from several vantage points of the alignment site and depict the overall character of the surrounding area. (**Exhibits 4-1a–d)**

According to the *City of Perris General Plan Draft Environmental Impact Report* (Perris General Plan EIR), the City is located on a flat, broad basin with the San Jacinto Mountains to the northeast and east; the San Bernardino Mountains to the north; the San Gabriel Mountains to the northwest; and the Santa Ana Mountains to the west and southwest. Scenic features, identified in the Perris General Plan EIR as significant vistas, include the view north to the San Bernardino Mountains and the western, eastern, and northern views of the surrounding foothills. Additionally, in the west-central area of the City are large rocks scattered among undeveloped, rolling topography. However, not one rock or collection of rocks in the City's landscape is notable by virtue of unique formation, size, or character. Further, no notable stands of native or mature trees exist in the City or near the Project alignment (Perris 2004).

The City does not have any historic buildings listed on the California Office of Historic Preservation (OHP 2021). Further, there are no officially designated scenic highways in or near the City or Project alignment. The nearest designated State scenic highway to the City is a portion of State Route (SR) 74 in the San Jacinto Mountains about 18 miles east of the City. A segment of SR-74 passes through the southern and western part of the City and is considered an "Eligible State Scenic Highway – Not Officially Designated" by the California Department of Transportation (Caltrans 2021). However, the Project alignment is approximately 0.4 miles from SR-74 and after construction the pipeline would be located below ground surface. Therefore, the Project alignment will not impede scenic views.

Scenic vistas provide views of these features from public spaces. Views of the scenic features identified in the Perris General Plan EIR could be temporarily affected during construction of the Project by the presence of construction equipment. However, this would not represent a permanent change in views. As such, views of construction activity would not be considered a substantial adverse effect on a scenic vista or degradation of the visual character of the area.



View West from Ellis Avenue and Dunlap Drive.



View East from Ellis Avenue and Dunlap Drive.

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Existing Views

Exhibit 4-1a

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

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View North of Dunlap Drive from Ellis Avenue.



View North on Dunlap Drive.

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Existing Views

Exhibit 4-1b

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

(07/01/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\MND\ex_SP.pdf



View North towards San Jacinto River.



View North on Dunlap Drive of San Jacinto River Crossing.

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Existing Views

Exhibit 4-1c

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

(07/01/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\MND\ex_SP.pdf



View North past San Jacinto River Crossing.



View South of Dunlap Drive from San Jacinto Aveune.

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Existing Views

Exhibit 4-1d

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

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Once construction is complete, the pipeline and related infrastructure would be located entirely underground and would not be visible or otherwise obstruct scenic vistas in the long term. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Less Than Significant With Mitigation. Project construction would occur during daytime hours Monday through Friday. However, during construction, the Project would require lighting for adequate illumination for safety and security. The Project would create a new temporary source of light during nighttime hours, thus resulting in a potentially significant impact. Implementation of **MM AES-1** requiring the use of shielding and directional lighting methods to direct lighting away from adjoining properties and the public areas, impacts associated with potential nighttime construction lighting would be less than significant with mitigation.

Glare is a common daytime phenomenon and is caused by light reflections from pavement, vehicles, and building materials such as reflective glass and polished surfaces. Construction equipment could be a minor source of glare, where sunlight reflects on glass. However, due to the limited amount of equipment and the relatively brief construction period, this would not be considered a substantial new source of glare. As discussed above, once construction is complete the pipeline and related infrastructure would be located entirely underground and, as such, would not result in a new source of light or glare. Therefore, impacts associated with substantial light or glare would be less than significant, and no mitigation is required.

MITIGATION MEASURES

MM AES-1 During construction, as deemed necessary by the District, security lighting during the nighttime hours, Monday through Sunday, would be directed away from adjoining properties and the public right of way by the use of shielded and directional lighting methods.

II. AGRICULTURE AND FORESTRY RESOURCES

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 Department 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.	**Potentially Significant Impact**	**Less than Significant with Mitigation**	**Less than Significant Impact**	**No Impact**
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?	☐	☐	☐	☒

No Impact. The Project alignment and surrounding areas are designated Farmland of Local Significance by the California Department of Conservation Farmland Mapping and Monitoring Program (DOC 2016b). However, the Project alignment area is not used for agricultural production and is not zoned for agriculture (Perris 2010). In addition, the Project alignment is not under the Williamson Act as described in the City's General Plan Land Use Element (Perris 2016a). Additionally, the Project involves installation of a pipeline below ground surface largely within an established roadway (i.e., Dunlap Drive); therefore, the Project would not convert Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance to non-agricultural use nor would the Project conflict with Williamson Act contracts or existing zoning for agricultural use. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact. According to Section 12220(g) of the *California Public Resources Code*, "forest land is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits". The Project alignment does not meet the definition of forest land, timberland, or timberland production and would not result in the loss of forest land or conversion of forest land to non-forest use. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

No Impact. As discussed previously, the Project alignment is designated as Farmland of Local Significance but it is not zoned for agriculture. There are no areas adjacent to the Project alignment that are currently used for agricultural purposes. There are no forest or timberlands in the vicinity of the Project alignment; therefore, the Project would not convert forest land to non-forest use. The purpose of the Project is to repair the water conveyance infrastructure in order to continue meeting current and future demands, rather than to facilitate future growth. There would be no impact, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

III. AIR QUALITY

Existing Conditions

Air quality in the City is regulated by the South Coast Air Quality Management District (SCAQMD), which is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (SoCAB). Both the State of California and the U.S. Environmental Protection Agency (USEPA) have established health-based Ambient Air Quality Standards (AAQS) for air pollutants, which are known as "criteria pollutants". The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety. The AAQS for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with a diameter of 10 microns or less (PM10), fine particulate matter with a diameter of 2.5 microns or less (PM2.5), and lead are shown in **Table 4-1** on the following page.

Regional air quality is defined by whether the area has attained or not attained State and federal air quality standards, as determined by air quality data from various monitoring stations. Areas that are considered in "nonattainment" are required to prepare plans and implement measures that will bring the region into "attainment". When an area has been reclassified from nonattainment to attainment for a federal standard, the status is identified as "maintenance", and there must be a plan and measures established that will keep the region in attainment for the following ten years.

TABLE 4-1
CALIFORNIA AND FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM10	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
PM2.5	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	

TABLE 4-1
CALIFORNIA AND FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM10: respirable particulate matter 10 microns or less in diameter; AAM: Annual Arithmetic Mean; –: No Standard; PM2.5: fine particulate matter 2.5 microns or less in diameter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter; NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer.

[a] *National Primary Standards:* The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[b] *National Secondary Standards:* The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Note: More detailed information in the data presented in this table can be found at the California Air Resources Board website (www.arb.ca.gov).

Source: CARB 2016

For the California Air Resources Board (CARB), an "Unclassified" designation indicates that the air quality data for the area are incomplete and do not support a designation of attainment or nonattainment. **Table 4-2** summarizes the current attainment status of the SoCAB for the criteria pollutants.

TABLE 4-2
CRITERIA POLLUTANT DESIGNATIONS
IN THE SOUTH COAST AIR BASIN

Pollutant	State	Federal
O_3 (1-hour)	Nonattainment	No Standard
O_3 (8-hour)	Nonattainment	Nonattainment
PM10	Nonattainment	Attainment/Maintenance
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment/Attainment[a]
Visibility-Reducing Particles	Unclassified[b]	No Standards
Sulfates	Attainment	
Hydrogen Sulfide	Unclassified	

O_3: ozone; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; CO: carbon monoxide; NO_2: nitrogen dioxide; SO_2: sulfur dioxide; SoCAB: South Coast Air Basin.

[a] Los Angeles County is classified as nonattainment for lead; the remainder of the SoCAB is in attainment of State and federal standards.

[b] "Unclassified" designation indicates that the air quality data for the area are incomplete and do not support a designation of attainment or nonattainment.

Source: CARB 2021, USEPA 2021.

O_3 is formed by photochemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOCs) rather than being directly emitted. O_3 is the principal component of smog. Elevated O_3 concentrations cause eye and respiratory infection; reduce resistance to lung infection; and may aggravate pulmonary conditions in persons with lung disease. O_3 is also damaging to vegetation and untreated rubber. The entire SoCAB is designated as a nonattainment area for the State one-hour O_3 standard and for the State and federal eight-hour standards.

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, headaches, and fatigue. The SoCAB is designated as an attainment area for federal CO standards.

NO_2 (a "whiskey brown"-colored gas) and nitric oxide (NO) (a colorless, odorless gas) are formed from combustion devices. These compounds are referred to as NOx. NOx is a primary component of the photochemical smog reaction. The severity of health effects of NOx depends primarily on the concentration inhaled. Acute symptoms can include coughing, difficulty breathing, vomiting, headache, and eye irritation. Respiratory symptoms may also increase in severity after prolonged exposure.

SO_2 is a corrosive gas that is primarily formed from the combustion of fuels containing sulfur (e.g., from power plants) and heavy industry that use coal or oil as fuel. SO_2 irritates the respiratory tract and can result in lung disease and breathing problems for asthmatics. Atmospheric SO_2 also contributes to acid rain.

Lead is found in old paints and coatings, plumbing, and a variety of other materials including gasoline anti-knock additives. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. However, lead emissions have significantly decreased due to the near elimination of the use of leaded gasoline.

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Respirable particulate matter (i.e., PM10) derives from a variety of sources including road dust from paved and unpaved roads; diesel soot; combustion products; tire and brake abrasion; construction operations; and fires. Fuel combustion and certain industrial processes are primarily responsible for fine particle (i.e., PM2.5) levels. Coarse particles (PM10) can accumulate in the respiratory system and aggravate health problems such as asthma. PM2.5 can deposit itself deep in the lungs and may contain substances that are harmful to human health.

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs may be emitted from a variety of common sources, including motor vehicles, gasoline stations, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different than the “criteria” pollutants previously discussed in that AAQS have not been established for them. TACs occurring at extremely low levels may still affect health, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts on human health are described by having carcinogenic risk and being chronic (i.e., of long duration) or acute (i.e., severe but of short duration). Diesel particulate matter (diesel PM) is a TAC and is responsible for the majority of California’s known cancer risk from outdoor air pollutants.

The effects from air pollution can be significant, both in the short-term during smog alerts, but also from long-term exposure to pollutants. While the majority of the populace can overcome short-term air quality health concerns, selected segments of the population are more vulnerable to its effects. Specifically, young children, the elderly, and persons with existing health problems are most susceptible to respirator complications.

The SCAQMD defines a “sensitive receptor” as a land use or facility such as residences, schools, childcare centers, athletic facilities, playgrounds, retirement homes, and convalescent homes (SCAQMD 1993). The nearest land use to the Project alignment is the Riverside Radio Control Club Flying Field, which is located approximately 0.18 miles northwest of the north end of the Project alignment; however, this is not considered a sensitive use according to SCAQMD guidance. The nearest sensitive receptor to the Project alignment is a residential use is located approximately 0.7 miles to the southeast of the Project alignment.

Significance Criteria

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management district may be relied upon to make significance determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of Project-related air pollutant emissions; **Table 4-3** presents the current significance thresholds.

TABLE 4-3
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds[a]		
Pollutant	**Construction**	**Operation**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TACs, Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2e for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants[b, c]		
NO_2 1-hour average annual arithmetic mean	The SCAQMD is in attainment; the Project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (State) 0.03 ppm (State) and 0.0534 ppm (federal)	
PM10 24-hour average annual average	 10.4 µg/m^3 (construction)[c] & 2.5 µg/m^3 (operation) 1.0 µg/m^3	
PM2.5 24-hour average	 10.4 µg/m^3 (construction)[c] & 2.5 µg/m^3 (operation)	
SO_2 1-hour average 24-hour average	 0.25 ppm (State) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (State)	
Sulfate 24-hour average	 25 µg/m^3 (State)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20.0 ppm (State) and 35 ppm (federal) 9.0 ppm (State/federal)	
Lead 30-day average Rolling 3-month average	 1.5 µg/m^3 (State) 0.15 µg/m^3 (federal)	

NOx: nitrogen oxides; lbs/day: pounds per day; VOC: volatile organic compound; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; SOx: sulfur oxides; CO: carbon monoxide; TACs: toxic air contaminants; GHG: greenhouse gases; MT/yr CO_2e: metric tons per year of carbon dioxide equivalents; NO_2: nitrogen dioxide; ppm: parts per million; µg/m^3: micrograms per cubic meter; SCAQMD: South Coast Air Quality Management District

[a] Source: SCAQMD CEQA Handbook (SCAQMD 1993)
[b] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated
[c] Ambient air quality threshold is based on SCAQMD Rule 403

Source: SCAQMD 2019

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district 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?	☐	☐	☒	☐

Less than Significant Impact. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMPs).

On March 3, 2017, the SCAQMD adopted the 2016 AQMP, which is a regional and multi-agency effort (SCAQMD, CARB, Southern California Association of Governments [SCAG], and the USEPA. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy; updated emission inventory methodologies for various source categories; and SCAG's latest growth forecasts. The main purpose of an AQMP is to bring an area into compliance with the requirements of federal and State air quality standards.

The two principal criteria for conformance to an AQMP are the following:

1. Whether the project would result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of air quality standards and
2. Whether the project would exceed the assumptions in the AQMP.

With respect to the first criterion, the analysis in Response to Threshold III(b) below demonstrate that the Project would not (1) generate short-term or long-term emissions of VOCs, NOx, which are O_3 precursors, PM10, or PM2.5 that could potentially cause an increase in the frequency or severity of existing air quality violations; (2) cause or contribute to new violations; or (3) delay timely attainment of air quality standards.

With respect to the second criterion, the Project would not increase or modify SCAG's population, housing, or employment projections. The Project would accommodate the projected growth in population accounted for in the 2016 AQMP emissions forecast and would provide additional recycled water conveyance capacity to serve the demands of local communities. Therefore, the Project would be consistent with the region's AQMP. There would be a less than significant impact.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

Less than Significant Impact. The SCAQMD has developed significance thresholds to determine whether State and federal air quality standards would be violated or whether a substantial contribution to a violation would occur. These significance thresholds have been developed for the construction and operations phases of the Project and examine the potential impacts of the Project's emissions on both a regional and local context.

Construction Emissions – Regional

Criteria pollutant emissions would occur during construction from operation of construction equipment; asphalt removal and earthmoving activities, which would generate fugitive dust; export of excavated soil and demolished asphalt; import of construction materials; and operation of vehicles driven to and from the Project alignment by construction workers.

Project emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 computer program (CAPCOA 2017). CalEEMod is designed to model construction and operational emissions for land development projects and allows for the input of project- and county-specific information. CalEEMod has separate databases for specific counties and air districts, and the County of Riverside database was used for the proposed Project.

The mass emissions significance thresholds (see **Table 4-3**) are based on the rate of emissions (i.e., pounds of pollutants emitted per day). Therefore, the quantity, duration, and intensity of construction activity are important in ensuring the analysis of worst case (i.e., maximum daily) emissions scenarios. The Project activities (e.g., asphalt removal, excavation, pipe installation, backfill, paving) are identified by start date and duration. Each activity has associated off-road equipment (e.g., backhoes, cranes, pavers) and on-road vehicles (e.g., haul trucks, asphalt trucks, worker commute vehicles).

Construction hauling truck trips were estimated based on the construction phase length and amount of debris or soil to export. Project-specific inputs can be found in the CalEEMod output data, located in Appendix A of this IS/MND. Dust control by watering was assumed, consistent with the requirements of SCAQMD Rule 403. Specifically, during construction of the Project, the District and its contractors shall be required to comply with regional rules, which would assist in reducing short-term air pollutant emissions. SCAQMD Rule 402 requires that air pollutant emissions not be a nuisance off site. SCAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures so that dust does not remain visible in the atmosphere beyond the property line of the emission source.

Maximum daily emissions for the peak workday of the proposed Project are shown in **Table 4-4**. If construction is delayed and/or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner construction equipment fleet mix and/or (2) a less

intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). As shown, all criteria pollutant emissions would be less than their respective thresholds. There would be less than significant impacts from construction of either the proposed Project and no mitigation is required.

TABLE 4-4
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
(LBS/DAY)

Project Construction	VOC	NOx	CO	SOx	PM10	PM2.5
2021	3	28	29	<1	2	2
Maximum	**3**	**28**	**29**	**<1**	**2**	**2**
SCAQMD Daily Thresholds (Table 4-3)	***75***	***100***	***550***	***150***	***150***	***55***
Exceeds SCAQMD Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

lbs/day: pounds per day; VOC: volatile organic compound(s); NOx: nitrogen oxides; CO: carbon monoxide; SOx: sulfur oxides; PM10: inhalable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; SCAQMD: South Coast Air Quality Management District.

Source: CalEEMod data in Appendix A.

Construction Emissions – Local/Ambient Air Quality

The localized effects from the on-site portion of daily emissions were evaluated at receptor locations potentially impacted by construction of the proposed Project, according to the SCAQMD's localized significance threshold (LST) method, which utilizes on-site emissions rate look up tables and project-specific modeling, where appropriate (SCAQMD 2008a). When quantifying mass emissions for localized analysis, only emissions that occur on site are considered. Consistent with the SCAQMD's LST method guidelines, emissions related to off-site delivery/haul truck activity and employee trips are not considered in the evaluation of localized impacts.

LSTs are applicable to the following four criteria pollutants: NO_2, CO, PM10, and PM2.5. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest receptor. For the LST CO and NO_2 exposure analysis, receptors who could be exposed for one hour or more are considered. For PM10 and PM2.5 exposure analysis, receptors who could be exposed for 24 hours are considered. The mass rate look-up tables were developed for each source receptor area and can be used to determine if a project may generate significant adverse localized air quality impacts. The SCAQMD provides LST mass rate look-up tables for projects that are less than or equal to five acres, accordingly, this is the appropriate method for the Project. The closest receptor would be the Riverside Radio Control Club Flying Field, located approximately 930 feet (or 284 meters) from the Project alignment.

As shown in **Table 4-5**, localized emissions for all criteria pollutants for the proposed Project would be less than their respective SCAQMD LSTs for all pollutants. There would be less than significant impacts.

TABLE 4-5
LOCALIZED CONSTRUCTION POLLUTANT EMISSIONS
(LBS/DAY)

	NOx	CO	PM10	PM2.5
Localized Project Construction Emissions	13	12	1	1
SCAQMD LSTs*	**424**	**8,078**	**98**	**38**
Exceeds SCAQMD Thresholds?	**No**	**No**	**No**	**No**

lbs/day: pounds per day; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; SCAQMD: South Coast Air Quality Management District; LST: Localized Significance Threshold.

* Thresholds for Source Receptor Area 24, Perris Valley, 1-acre site, 284-meter receptor distance

Source: SCAQMD 2009.

Long-Term Operational Emissions

After installation of underground pipeline for the proposed Project, there would be occasional inspection and maintenance operational trips; as presently occur therefore energy consumption, or other sources of criteria pollutant emissions would be minimal. There would be no new operations phase emissions. Therefore, there would be no impact.

The County of Riverside portion of the SoCAB is a nonattainment area for O_3, PM10, and PM2.5. The proposed Project would generate these pollutants during construction; therefore short-term cumulative impacts related to air quality could occur if Project construction and nearby construction activities were to occur simultaneously. With respect to local impacts, cumulative construction particulate (i.e., fugitive dust) impacts are considered when projects are located within a few hundred yards of each other. As described above, construction emissions would be below the SCAQMD regional and localized significance thresholds; therefore, consistent with SCAQMD guidance, short-term construction emissions of nonattainment pollutants during construction of the Project would not be cumulatively considerable. There would be less than significant impacts from construction of the proposed Project.

As previously discussed, there would be no long-term operational emissions nor would the criteria pollutants net increase be cumulatively considerable. There would be no long-term cumulative impact.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Less than Significant Impact. Exposure of sensitive receptors is addressed for the following situations: CO hotspots; criteria pollutants from on-site construction; and TACs from on-site construction.

Carbon Monoxide Hotspot

A CO hotspot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at level of service (LOS) E or F or causes an intersection that would operate at LOS D or better without the Project to operate at LOS E or F with the Project, a quantitative screening is required. As discussed previously in the Response to Threshold III(b), there would be no operations phase traffic associated with the proposed Project. Thus, the Project would neither cause new severe congestion nor significantly worsen existing congestion. There would be no potential for a CO hotspot or exposure of sensitive receptors to substantial, Project-generated local CO emissions. There would be no impact.

Criteria Pollutants from On-Site Construction

Exposure of persons to NO_2, CO, PM10, and PM2.5 emissions is discussed previously in the LST analysis. As discussed, there would be a less than significant impact.

Toxic Air Contaminant (Diesel PM) Emissions from On-Site Construction

Construction activities would result in short-term, Project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment used for site preparation (e.g., asphalt removal, excavation, and backfilling), and paving. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, health risk assessments—which determine the exposure of sensitive receptors to TAC emissions—should be based on a 30- to 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with a project.

For the Project, there would be few pieces of off-road, heavy-duty diesel equipment in operation, and the construction period would be short when compared to a 30- to 70-year exposure period. In addition, there are no sensitive receptors within 0.5 miles of the Project alignment. When considering these facts combined with the highly dispersive properties of diesel PM and additional reductions in particulate emissions from newer construction equipment, as required by USEPA and CARB regulations, it can be concluded that TAC emissions during construction of the Project would not expose sensitive receptors to substantial emissions of TACs. There would be a less than significant impact.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Less than Significant Impact. Project construction would use equipment and activities that could result in other emissions (such as those leading to odors). During construction, the proposed Project would operate equipment that may generate odors resulting from on-site construction equipment's diesel exhaust emissions or paving operations. However, these odors would be temporary and would dissipate rapidly from the source with an increase in distance. The nearest use to the Project would be located 0.18 miles from the Project alignment. These odors would not be of such magnitude to cause a public nuisance. Therefore, the impacts would be short-term; would not affect a substantial number of people; and would be less than significant.

Objectionable odors are generally associated with agricultural activities; landfills and transfer stations; the generation or treatment of sewage; the use or generation of chemicals; food processing; or other activities that generate unpleasant odors (SCAQMD 1993). The proposed Project would involve installation of underground pipelines. None of the proposed Project elements would generate objectionable odors. In addition, the Project uses are regulated from nuisance odors or other objectionable emissions by SCAQMD Rule 402, Nuisance. Rule 402 prohibits discharge from any source of air contaminants or other material which would cause injury, detriment, nuisance, or annoyance to people or the public. Therefore, the Project would not result in other emissions that would adversely affect a substantial number of people, and the impact would be considered less than significant.

MITIGATION MEASURES

No mitigation is required.

IV. BIOLOGICAL RESOURCES

This section is based on the results in the following documents:

- *Biological Resources Assessment for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project* (Psomas 2020; Appendix B);
- *Stephens' Kangaroo Rat Habitat Assessment for the Dunlap Drive Recycled Water Pipeline Replacement Project*, Riverside County, California (Phil Brylski, PhD [Brylski 2021]; Appendix G);
- *Results of Special Status Plant Surveys for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project* (Psomas 2021a; Appendix H);
- *Dry Season Survey Results for Vernal Pool Branchiopods Conducted for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project in Riverside County, California* (Psomas 2021c; Appendix I); and
- *Results of the Wet Season Vernal Pool Branchiopod Surveys for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project* (Psomas 2021b; Appendix J).

Additionally, Psomas conducted a habitat assessment for quino checkerspot butterfly (*Euphydryas editha quino*) along the project alignment and the results are incorporated in this section; no formal report was prepared.

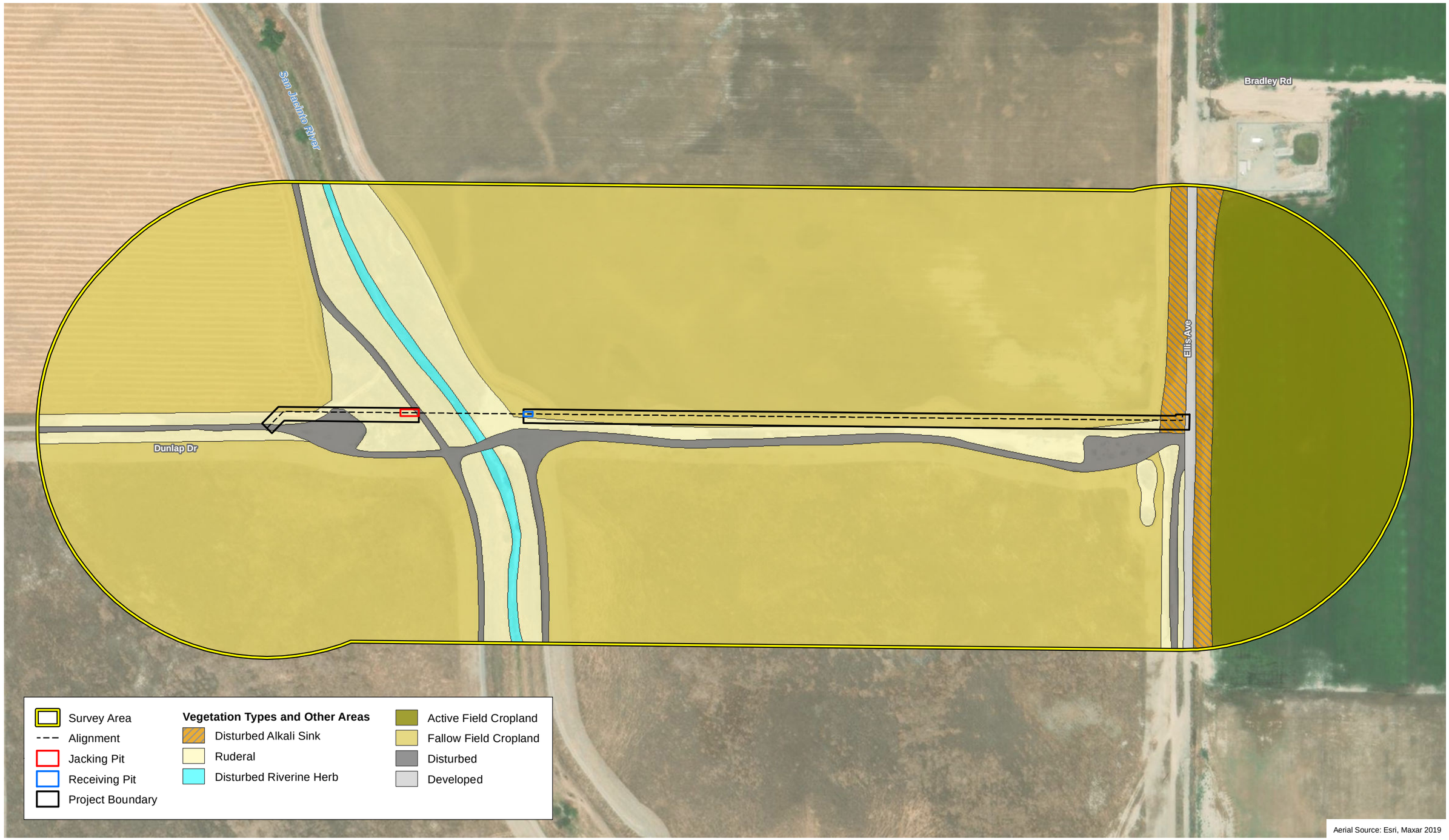
Survey Methods

The Project alignment and a 500-foot buffer (herein after referred to as "survey area") was surveyed to identify habitat types on and adjacent to the proposed Project. Construction activities associated with the proposed Project are anticipated be contained within the 30-foot-wide easement along the Project alignment (hereinafter referred to as "impact boundary) (**Exhibit 4-2**).

A quino checkerspot butterfly habitat assessment and evaluation was conducted along the Project alignment on February 10, 2021, by Psomas Senior Biologist Lindsay Messett. Ms. Messett holds a permit to conduct focused surveys for the species. The proposed Project occurs within the USFWS-designated survey area for quino checkerspot butterfly (USFWS 2003).

Existing Conditions

The survey area contains the following vegetation types and other areas: disturbed alkali sink, ruderal, disturbed riverine herb, active field cropland, fallow field cropland, disturbed, and developed. The proposed Project would result in approximately 1.24 acres of impacts to these vegetation types, as shown in **Table 4-6**.



Aerial Source: Esri, Maxar 2019

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Vegetation Types and Other Areas

Exhibit 4-2

Dunlap Drive Recycled Water Pipeline Replacement Project

N E S W

200 100 0 200

Feet

PSOMAS

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TABLE 4-6
ANTICIPATED IMPACTS TO
VEGETATION TYPES

Vegetation Type	Anticipated Impact (acre)
Disturbed Alkali Sink	0.04
Ruderal	0.25
Disturbed Riverine Herb	–
Active Field Cropland	–
Fallow Field Cropland	0.89
Disturbed	0.05
Developed	0.01
Total	**1.24 acres**

Disturbed Alkali Sink

Disturbed alkali sink occurs along the Ellis Avenue road edge near the southern end of the survey area. This area contains a mix of plant species, many of which are known to occur in saline or alkaline conditions. Native species include alkali weed (*Cressa truxillensis*), salt grass (*Distichlis spicata*), bush seepweed (*Suaeda nigra*), silverscale (*Atriplex argentea*), willow weed (*Persicaria lapathifolia*), and annual sunflower (*Helianthus annuus*). The vegetation is degraded (disturbed) by the presence of non-native species such as five-hook bassia (*Bassia hyssopifolia*), stinknet (*Oncosiphon pilulifer*), and red brome (*Bromus rubens*).

Ruderal

Ruderal vegetation occurs along Dunlap Drive, a portion of Ellis Avenue, and along the banks/berms of the San Jacinto River. This vegetation is dominated by a variety of non-native, weedy, senescent species such as black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), and non-native grasses. Most of the remnant grass species present were not identifiable at the time of the survey; however, evidence of wheat (*Triticum aestivum*), bromes (e.g., *Bromus rubens* or *Bromus diandrus*), and oats (*Avena* sp.) were observed in the survey area. Scattered silverscale also occurs in this vegetation type.

Disturbed Riverine Herb

Disturbed riverine herb occurs along the San Jacinto Riverbed. This vegetation type was dominated by alkali-mallow (*Malvella leprosa*), curly dock (*Rumex crispus*), and non-native grasses.

Active Field Cropland

Active field cropland occurs at the southern end of the survey area, approximately 50 feet south of the Project alignment. This vegetation type consists of a field of alfalfa (*Medicago sativa*) that is being actively irrigated.

Fallow Field Cropland

Fallow field cropland occurs over most of the survey area on either side of Dunlap Drive. The area east of Dunlap Drive appears to have been tilled or disced relatively recently while the area to the

west does not appear to have been actively managed as recently. Remnant stalks of dead, non-native grasses occur throughout the area. Species identification was not possible, but species likely present include wheat, bromes, and/or oats.

Disturbed

Disturbed areas consist of graded, dirt roads (e.g., Dunlap Drive). These areas are unvegetated.

Developed

The developed area consists of Ellis Avenue, which is a paved road at the southern end of the survey area.

Jurisdictional Resources and Evidence of Previous Pooling

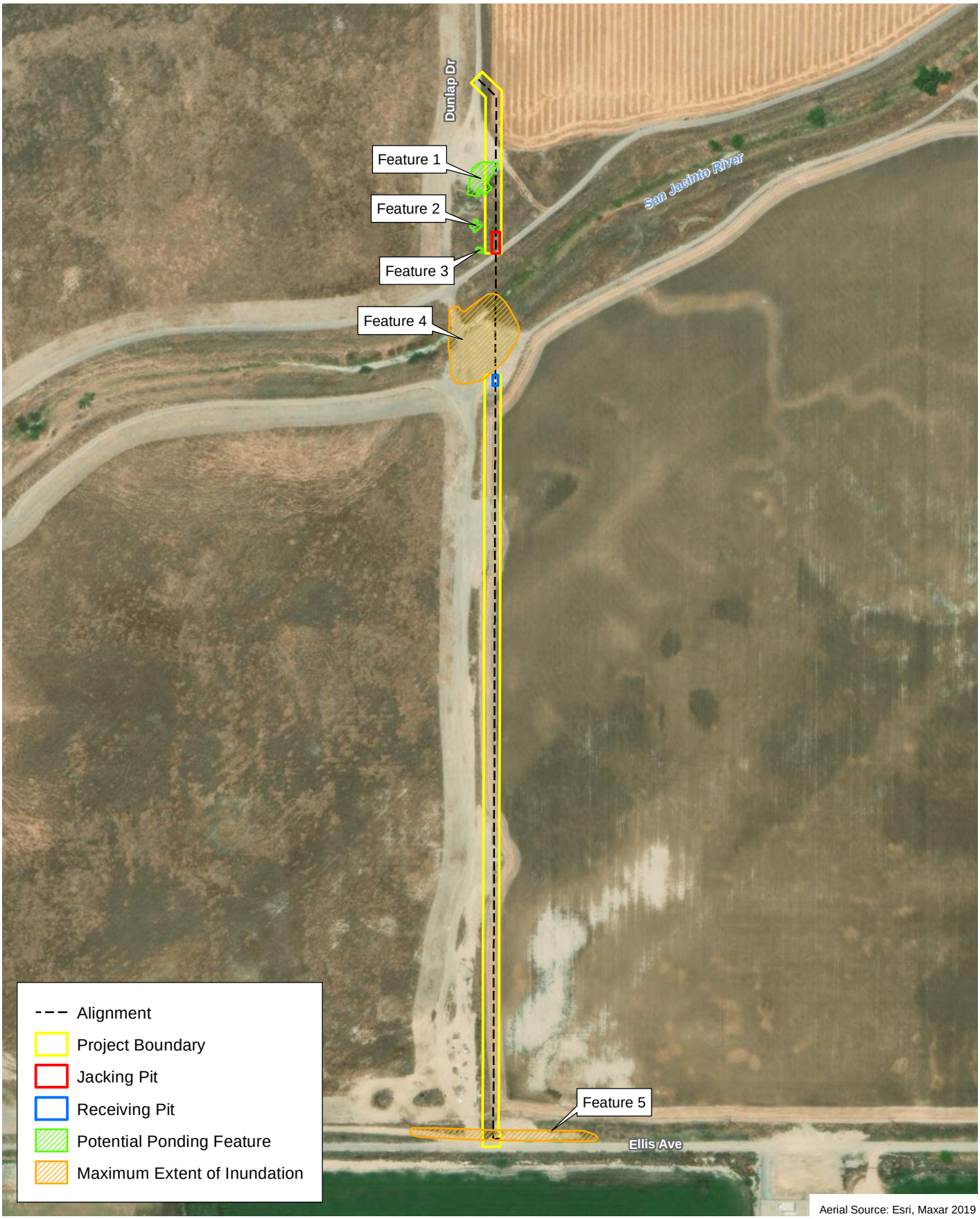
One drainage feature, the San Jacinto River, occurs in the survey area. The San Jacinto River ultimately flows into Canyon Lake (also known as Railroad Canyon Reservoir) located approximately 5 miles southwest of the survey area. Downstream of Canyon Lake, water flows along the San Jacinto River and ultimately discharges into Lake Elsinore. Within the survey area (but outside of the impact boundary), the San Jacinto River exhibits bed, banks, and indicators of Ordinary High Water Mark. It is likely subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the CDFW.

The proposed Project is located on gently-sloping areas mapped with clay soils known to support pooling of surface water for extended periods. Evidence of extended pooling was observed in the impact boundary and the immediate vicinity during the field survey. The evidence observed consisted of cracked soils in small depressions located in the disturbed alkali sink, ruderal areas, and within the adjacent access road (**Exhibit 4-3**). The disturbed alkali sink also contains plant species, such as bush seepweed, that are known to occur in wet and seasonally inundated areas. The presence of these plant species further reinforces the finding that the soils present in the impact boundary and vicinity are likely inundated for extended periods; however, pooling may also occur in areas where these plant species were not observed. The proposed Project would result in approximately 0.03 acres of impacts to potential and observed ponding features, as shown in **Table 4-7**.

TABLE 4-7
ANTICIPATED IMPACTS TO POTENTIAL AND OBSERVED PONDING FEATURES

Feature Number	Anticipated Impact (acre)
Feature 1 [a]	0.02
Feature 2 [a]	–
Feature 3 [a]	–
Feature 4	0.00 [b]
Feature 5	0.01
Total	**0.03**

[a] Features 1, 2, and 3 exhibited evidence of previous ponding (such as cracked soils) but no inundation was observed during the 2020/2021 wet season.
[b] The proposed Project would impact less than 0.001 acre of Feature 4.



Aerial Source: Esri, Maxar 2019

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Ponding Features

Exhibit 4-3

Dunlap Drive Recycled Water Pipeline Replacement Project

N W E S

250 125 0 250 Feet

PSOMAS

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	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modification, 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?	☐	☒	☐	☐

Less than Significant with Mitigation.

Special Status Plant Species

Plants may be considered "special status" due to declining populations, vulnerability to habitat change, or restricted distributions. Several special status plant species have been reported in the vicinity of the proposed Project based on the results of the literature review.

The following federally and/or State listed Endangered, Threatened, or Rare species have potential or limited potential to occur in the disturbed alkali sink and ruderal portions of the impact boundary: Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), thread-leaved brodiaea (*Brodiaea filifolia*), spreading navarretia (*Navarretia fossalis*), and California Orcutt grass (*Orcuttia californica*).

In addition to species formally listed as Endangered, Threatened, or Rare by the resource agencies, several special status species (species with a California Rare Plant Rank [CRPR] of 1 or 2) have been reported from the literature review. The following species with a CRPR of 1 or 2 have potential or limited potential to occur in disturbed alkali sink and ruderal portions of the impact boundary: chaparral sand-verbena (*Abronia villosa* var. *aurita*), South Coast saltscale (*Atriplex pacifica*), Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), mud nama (*Nama stenocarpa*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*).

Focused plant surveys were conducted for the Project alignment. Reference populations and regional rainfall amounts were monitored to ensure the scientific adequacy of focused surveys. Given the drought conditions during the 2020/2021 wet season, observations made at reference populations are important for determining whether survey results are valid. Focused survey results are conclusive for observed blooming at reference populations or are known to grow or bloom in conjunction with physiologically similar plant species observed growing this season. It is assumed that conditions along the Project alignment during the surveys were likely suitable to detect these species, if they were present. However, focused survey results are inconclusive for species not observed blooming at reference populations. It is unknown whether negative focused survey results indicate that these species are absent or if they did not bloom in spring 2021 due to low rainfall.

Munz's onion, San Diego ambrosia, thread-leaved brodiaea, California Orcutt grass, chaparral sand-verbena, smooth tarplant, long-spined spineflower, Coulter's goldfields, mud nama, and Wright's trichocoronis were observed blooming at the reference population, but were not observed

in the impact boundary. Therefore, these species are not expected to occur in the impact boundary and no mitigation would be required.

As part of the focused plant survey, habitat for all the species with potential to occur was further analyzed. South Coast saltscale, Parish's brittlescale, and Davidson's saltscale were determined not to likely be within the impact boundary due either to a lack of suitable habitat, the impact boundary occurring outside of the known species range, or both. Therefore, these species are not expected to occur in the impact boundary and no mitigation would be required.

Populations of spreading navarretia and San Jacinto Valley crownscale, both listed under the Federal Endangered Species Act (FESA) and listed as 1B.1 CNPR species, are known to occur on the Project alignment. These populations have been surveyed regularly since the 1990s with the most recent survey occurring in 2015 for San Jacinto Valley crownscale and in 2020 for spreading navarretia (CDFW 2020). Neither species was observed during the 2021 focused plant surveys conducted for the proposed Project; however, 2021 was a very poor rain year and blooming at the reference populations did not provide conclusive results. More specifically, the species were not observed blooming onsite or at the San Jacinto Wildlife Refuge, but there are reports of San Jacinto Valley crownscale blooming near the City of Hemet and spreading navarretia blooming in the Riverpark Mitigation Area (Perris area), albeit with limited plants observed to be germinating (Jones 2021 and Roberts 2021). Because both species are regularly known to occur onsite and the environmental conditions (i.e. rainfall) during the 2021 germinating season were so poor, the species' occupancy status' cannot be determined and the extent of the species' seed bank in the impact boundary cannot be delineated. Therefore, the proposed Project has potential to impact both spreading navarretia and San Jacinto Valley crownscale.

Any impact to occupied habitat of federally listed plant species or CNPR 1B.1 species (spreading navarretia and San Jacinto Valley crownscale) would be significant. Direct impacts would include the loss of potentially viable seeds and loss of the viable seeds present in the topsoil. The proposed Project construction activities could result in direct impacts to individuals if the initial ground disturbance occurs during the growing season of spreading navarretia and San Jacinto Valley crownscale (February through August). Furthermore, the proposed Project could result in the loss of dormant, viable seeds by impacting the top three inches of soil in the impact boundary.

The impact boundary is subject to regular, significant ground disturbance (including soil disking and off-road vehicle use) as a result of existing land use activities. The plant species (common and special status) that persist under these conditions must be tolerant of significant soil disturbances. Implementation of **MM BIO-1** would reduce potential Project-related impacts to special status plant species to less than significant levels. Specifically, if additional focused surveys determine that State or federally listed plant species are located in the impact boundary, then **MM BIO-1** would preserve the top three inches of earth for redistribution on top of any backfill upon completion of construction activities. This effort would preserve viable plant seeds located onsite and re-distribute the soils necessary to support growth of these seeds.

Plant species with a CRPR of 3 or 4 are more common, so while, if present, the impacts would be adverse, it would not be expected to reduce the population to an unsustainable level or reduce the range of the species. If present in the impact boundary, impacts to plant species with a CRPR of 3 or 4 would be less than significant and no mitigation measures are required.

Special Status Wildlife Species

Wildlife may be considered "special status" due to declining populations, vulnerability to habitat change, or restricted distributions. Several special status wildlife species have been reported in the vicinity of the survey area based on the results of the literature review.

The following federally and/or State listed Endangered or Threatened species were considered to have potential or limited potential to occur in the survey area: quino checkerspot butterfly, Riverside fairy shrimp (*Streptocephalus woottoni*), tricolored blackbird (*Agelaius tricolor*), and Stephens' kangaroo rat. Crotch bumble bee (*Bombus crotchii*) was previously a Candidate for listing under the California Endangered Species Act but this status was removed due to recent court rulings (CDFW 2021b).

In addition to species formally listed by the resource agencies, several special status species (e.g., Species of Special Concern [SSC], California Fully Protected [FP] species, etc.) have been reported from the literature review. The following non-listed special status species were considered to have potential or limited potential to occur in the disturbed alkali sink and ruderal portions of the impact boundary: western spadefoot (*Spea hammondii*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and southern grasshopper mouse (*Onychomys torridus ramona*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).

Only one federally or State-listed species was observed during the survey, an individual Swainson's hawk (*Buteo swainsoni*; State Threatened) was observed flying over the northern end of the survey area during one of the surveys. The impact boundary provides suitable foraging habitat for this species; however, the survey area is outside the currently known nesting range for the species. The individual observed is presumed to be a migrant and no impact to the individual or species is anticipated as a result of the proposed Project.

The proposed Project occurs within the USFWS-designated survey area for quino checkerspot butterfly. A Biologist holding a permit to survey for quino checkerspot butterfly conducted a focused habitat assessment for the species and determined no suitable habitat is present within the impact boundary or adjacent areas and that no focused surveys are necessary. Therefore, there would be no impact on this species and no mitigation would be required.

Focused surveys for Riverside fairy shrimp were conducted in 2021, which included both wet and dry season sampling. The laboratory that processed the dry season samples successfully hatched the fairy shrimp cysts present and determined only the commonly-occurring versatile fairy shrimp (*Branchinecta lindahli*) were present in the samples. Rainfall during the 2020/2021 wet season was below average; the areas identified as having potential to support seasonal ponding did not contain water long enough to satisfy the U.S. Fish and Wildlife Service's (USFWS') *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2017) protocol requirements for wet season surveys. Adult versatile fairy shrimp were observed and confirmed to be present during the wet season surveys but no special status species (i.e. Riverside fairy shrimp) were observed in the onsite ponding that occurred. Unlike the records for special status plant species, no special status fairy shrimp species have been documented onsite and the closest viable population is greater than 9 miles to the south. Due to the absence of Riverside fairy shrimp in the dry season samples and the distance of Project alignment from the nearest species occurrence, Riverside fairy shrimp is not expected to occur onsite and no further mitigation is necessary.

Suitable nesting habitat for tricolored blackbird was observed approximately 50 feet south of the Project alignment in the active field cropland. No direct impacts would occur as a result of the proposed Project; however, indirect noise impacts associated with construction activities may occur if the species is present in the adjacent habitat. Potential indirect noise impacts to this species may be significant. Implementation of **MM BIO-2**, a pre-construction nesting bird survey during peak nesting season (i.e., February 1 to August 31) by a qualified Biologist within 14 days

prior to vegetation removal activities, and assignment of appropriate buffers would reduce potential impacts to tri-colored blackbird to less than significant levels.

A focused habitat assessment for Stephens' kangaroo rat conducted for the proposed Project determined that the impact boundary does not contain suitable habitat for the species. Therefore, Stephens' kangaroo rat is not expected to occur. Therefore, there would be no impacts to the species and no mitigation would be required.

When areas in the impact boundary were ponding, all areas containing water were inspected for evidence of western spadefoot (such as presence of eggs, tadpoles, toad tracks, etc.). No nocturnal surveys were conducted; however, no eggs, tadpoles, or other evidence of the species were observed during any of the nine visits to the Project alignment that occurred during the wet season when the species is known to be above ground. The species was not likely present onsite during the surveys. Furthermore, regular disking of the adjacent agricultural fields limits the amount of suitable habitat present on and in the vicinity of the impact boundary. Therefore, no Project-related impact to the species are anticipated and no further measures are necessary.

The impact area is comprised primarily of areas that are heavily disturbed with regular disking as part of agricultural activities while the remainder of the impact area is subject to other agricultural disturbances such as off-road vehicle traffic and equipment staging. Although heavily disturbed, the impact boundary provides some low-quality foraging habitat for special status wildlife species. Structures resulting from the proposed Project would be located entirely below ground and upon completion of the proposed Project, the impact area would be allowed returned to its current condition. Furthermore, the impact area constitutes only a small portion of similar habitat found in the surrounding areas, which would not be directly affected by the proposed Project. The temporary loss of foraging habitat to special status wildlife species (including SSC and California FP species) as a result of the proposed Project would be less than significant.

Several burrowing SSC were previously determined to have potential to occur in the impact area, including Los Angeles pocket mouse, Dulzura pocket mouse, northwestern San Diego pocket mouse, and southern grasshopper mouse. The focused habitat assessment conducted for Stephens' kangaroo rat provided details about the habitat present on the impact boundary that are also applicable to other special status rodent species. The report specifically noted that no suitable habitat for Los Angeles pocket mouse was present in the impact boundary. Many of the habitat elements present onsite that preclude Los Angeles pocket mouse from occurring also apply to Dulzura pocket mouse, northwestern San Diego pocket mouse, and southern grasshopper mouse. These elements include the presence of dense non-native grassland and the predominance of recently tilled agricultural lands on and in the vicinity of the impact boundary. Therefore, these species are not anticipated to occur and no impacts are anticipated. No mitigation is required.

The San Diego jackrabbit, an SSC, was observed in the survey area during the surveys. No forms or associated resting areas were observed within the impact boundary; however, the species is anticipated to traverse the impact area. Direct impacts to the species may occur if excavated areas trap individuals. **MM BIO-3** directs all trenches, holes, or pits shall be covered, ramped, or fenced completely at the end of each workday; inspected for any trapped wildlife prior to starting work each day, or continuing work after a prolonged break; and if trapped wildlife is found, safely removed or provided a method of egress and allowed to leave prior to continuing any further construction activity. Implementation of **MM BIO-3** would ensure impacts would be less than significant

White-tailed kite, burrowing owl, and loggerhead shrike have potential to occur on and adjacent to the impact boundary. White-tailed kite is a California Fully Protected species. Burrowing owl

and loggerhead shrike are both SSC. No suitable nesting habitat for either white-tailed kite or loggerhead shrike occurs inside the impact boundary, however, the impact boundary contains suitable foraging habitat and vegetation suitable nesting (trees and larger shrubs) occurs in scattered locations within 500 feet of the impact boundary. A burrow survey/habitat assessment for burrowing owl was conducted within the impact boundary and no suitable burrows or associated roosting habitat was observed. No burrow survey was conducted on the 500-foot buffer surrounding the impact boundary and the occupancy status of burrowing owl adjacent to the impact boundary is unknown. In addition to being special status species, all three bird species are also protected under California Fish and Game Code and the federal Migratory Bird Treaty Act (MBTA). Impacts to nests of these species would be considered a significant impact. Implementation of **MM BIO-2** (a pre-construction nesting bird survey during peak nesting season [i.e., February 1 to August 31] by a qualified Biologist within 14 days prior to vegetation removal activities) and **MM BIO-4** (a pre-construction survey a qualified Biologist for the burrowing owl between 14 and 30 days prior to any ground disturbance to include the area of proposed disturbance plus a 500-foot buffer [if access is available]),would reduce potential impacts on these species to less than significant levels.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☒	☐	☐

Less Than Significant with Mitigation.

Special Status Vegetation Types

The CDFW provides a list of vegetation alliances, associations, and special stands that are considered "sensitive natural communities" based on their rarity and threat (CDFW 2020d). The disturbed alkali sink vegetation type is comprised of both native and non-native plant species; three of the species present (alkali weed, salt grass, and bush seepweed) are associated with natural communities provisionally considered sensitive by the CDFW (the *Cressa truxillensis – Distichlis spicata* Association and the *Suaeda moquinii* Association[1], respectively). Vegetative cover in this vegetation type is comprised primarily of non-native species (e.g., five-hook bassia); therefore, it does not fit the membership rules of the sensitive natural communities noted. Therefore, no impact to any special status vegetation type would occur as a result of the proposed Project and no mitigation would be required.

The disturbed riparian herb vegetation within the survey area is not considered a sensitive natural community; however, this area falls within the jurisdictional authority of the regulatory agencies. This vegetation type and the associated jurisdictional area is located outside of the impact boundary; therefore, no impacts would occur and no mitigation would be required.

[1] The current name for bush seepweed is *Suaeda nigra* (Jepson Flora Project 2020); the species was formally named *Suaeda moquinii*.

Critical Habitat

Critical Habitat is designated by the USFWS for the survival and recovery of species listed as Threatened or Endangered under the Federal Endangered Species Act. The proposed Project occurs within the mapped boundaries of USFWS-designated Critical Habitat for spreading navarretia. The proposed Project does not involve any federal agency approval, funding, or property and the absence of a federal nexus removes any requirement of consultation with the USFWS. Spreading navarretia was not observed during the focused plant surveys; however, the distribution of spreading navarretia on the Project alignment remains unknown due to low rainfall. Implementation of **MM BIO-1** would reduce potential impacts on Critical Habitat to less than significant levels.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

Less than Significant with Mitigation. The San Jacinto River is under the jurisdiction of the USACE, RWQCB, and CDFW. The River occurs adjacent to the impact boundary; however, the use of a jack-and-bore method to install the pipeline under this jurisdictional feature would avoid direct impacts on jurisdictional waters.

During construction, runoff carrying silt, petroleum, or other chemical contaminants from construction equipment could potentially impact water quality in the San Jacinto River and, in turn, affect plant and wildlife species using adjacent habitat. This would be a significant impact to water quality in the San Jacinto River. With implementation of **MM HYDRO-1**, as stated in Section X. Hydrology and Water Quality, there would be a less than significant impact.

There are no State or federally protected wetlands in the impact boundary and no direct impacts are anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☒	☐	☐

Less Than Significant with Mitigation. Within large, open space areas where few or no man-made or naturally occurring physical constraints to wildlife movement are present, wildlife

corridors may not yet exist. However, once open space areas become constrained and/or fragmented as a result of urban development or the construction of physical obstacles (e.g., roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

The Project alignment is in a rural, agricultural landscape matrix. Regional wildlife movement occurs through agricultural areas between undeveloped open space around Lake Perris and the Badlands to the northeast and the hills around Canyon Lake and Lake Elsinore to the southwest. The San Jacinto River is generally an undeveloped, ephemeral waterway and provides a regional movement corridor for movement throughout this area. Local wildlife movement is expected to occur between agriculture fields and the San Jacinto River.

The proposed Project is not expected to impact regional or local wildlife movement because the proposed Project would not introduce any barriers to wildlife movement. Furthermore, the proposed Project is limited to a very small area (the impact boundary) and surrounded by hundreds of acres of open agricultural land which will not be affected by the proposed Project. While the proposed Project would temporarily constrain movement within the active construction area, wildlife could move to through accessible adjacent areas. Therefore, impacts would be considered less than significant, and no mitigation would be required.

The Migratory Bird Treaty Act (MBTA) protects migratory birds and their nests and eggs, both common and special status, from accidental or "incidental" take. Multiple sections of *California Fish and Game Code* provide protection for nesting birds and raptors. Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically addresses raptors (i.e., birds of prey in the orders *Falconiformes* and *Strigiformes*) and makes it unlawful to take, possess, or destroy these birds or their nest or eggs. Section 3513 prohibits the take or possession of migratory non-game birds as designated by the MBTA or any part of such bird.

Migratory birds and raptors have the potential to nest on and in the immediate vicinity of the impact boundary. With implementation of **MM BIO-2,** a pre-construction nesting bird survey during peak nesting season (i.e., February 1 to August 31) by a qualified Biologist within 14 days prior to vegetation removal activities, potential impacts on nesting birds would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

No Impact. The City of Perris Municipal Code (Chapter 19.71: Urban Forestry Establishment and Care) provides regulations and guidelines for the protection of existing trees on private and public land. No trees are located on the Project alignment and no conflicts with the municipal code would occur.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☒	☐	☐

Less Than Significant with Mitigation. The Project alignment is located in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area and the Stephens' Kangaroo Rat Habitat Conservation Plan (SKRHCP) area. The Project alignment is located in lands proposed for conservation under the MSHCP (i.e., Criteria Areas) and in the SKRHCP fee area. The District is not a signatory on the MSHCP Implementation Agreement nor on the SKRHCP.

Although the proposed Project is not subject to the requirements of the MSHCP, development of lands proposed for conservation has potential to conflict with the goals of the MSHCP. Impacts associated with the proposed Project would be temporary; no net loss of potential conservation land under the MSHCP would occur as a result of the proposed Project. However, the proposed Project may have temporary indirect effects on conservation areas (i.e., San Jacinto River). Section 6.1.4 of the MSHCP provides Urban/Wildlands Interface Guidelines to minimize adverse effects on existing and future MSHCP Conservation Areas. Specifically, the following guidelines associated with drainage and toxics apply directly to the proposed Project:

- "Proposed developments in proximity to the MSHCP Conservation Area shall incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area".

As detailed in Section X, Hydrology and Water Quality, Project construction has the potential to impact water quality through temporary earth-disturbance activities as well as waste construction materials and use of chemicals, liquid products, and petroleum products associated with the use of vehicles and equipment with the potential to leak pollutants onto the ground surface and, potentially, leach into the ground surface. The potential for release of these materials via runoff represents a potential conflict with the MSHCP for the San Jacinto River, thus resulting in a potentially significant impact. With implementation of Best Management Practices (BMPs) described in **MM HYDRO-1,** as stated in Section X. Hydrology and Water Quality, potential impacts would be reduced to less than significant levels.

MITIGATION MEASURES

Refer to **MM HYDRO-1** stated in Section X. Hydrology and Water Quality.

MM BIO-1 For the duration of construction activities, the District shall retain a qualified Project Botanist with experience surveying for spreading navarretia (*Navarretia fossalis*) and San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) (collectively referred to as the "target species") to assist with implementing this mitigation measure.

Within 30-days prior to construction-related excavation or boring activities in areas not disked or tilled within the last three (3) years, the top three (3) inches of soil to be impacted by Project construction shall be preserved. This preserved soil has potential to support the seed bank of the target species. The preserved soil shall be excavated, stockpiled onsite, and isolated from other Project-excavated soils. The preserved soil shall be kept dry throughout the extent of construction activities until it is redistributed on the top of the final backfill of boring or excavated areas outside of areas historically disked or tilled. The final elevation of the preserved and redistributed soil shall be set approximately six inches below the grade of the surrounding areas, unless determined otherwise by the Project Botanist. The area for final preserved soil disposition within the easement shall be determined by the Project Botanist.

If either target species is observed in the impact boundary during construction activities, then all construction activities affecting the top three (3) inches of soil within 25 feet of the occurrence locations shall be postponed until after the target plants onsite have either gone dormant (generally September 1 through November 30 but as determined by the Project Botanist), the plants are salvaged, or seed collection of the onsite plants have been completed. Project construction may only proceed within the 25-foot buffer at the discretion of an onsite Project Botanist. Prior to any plant salvage or seed collection from onsite target species, a Seed Collection and Plant Propagation Plan shall be prepared by a qualified Restoration Ecologist and all measures within shall be implemented for this Project. The Plan shall include methods for plant salvage, seed collection, seed storage, and seed propagation, either through re-distribution onto suitable portions of the Project alignment or through donation to a qualified botanical research institution, such as California Botanic Garden (formerly Rancho Santa Ana Botanical Garden).

Should Project construction be scheduled to begin after the blooming season for the target species, focused plant surveys shall be conducted for the target species during each season the target species would be observable, as determined by observations made at known reference populations. The surveys shall be performed in accordance with the most current protocols approved by the CDFW and the CNPS. The locations of all target plant species observed onsite during the surveys shall be mapped and the occupied locations shall be avoided to the extent possible. Plants that cannot be avoided shall be salvaged or seeds collected per the Seed Collection and Plant Propagation Plan.

MM BIO-2 If construction and/or vegetation removal must occur during the peak nesting season (i.e., February 1 to August 31), a pre-construction nesting bird survey shall be conducted by a qualified Biologist within 14 days prior to vegetation removal activities.

If the Biologist finds an active nest within or adjacent to the construction area, the Biologist shall identify an appropriate protective buffer zone around the nest depending on the sensitivity of the species, the nature of the construction activity, and the amount of existing disturbance in the vicinity. In general, the Biologist

should designate a buffer of 50 to 200 feet for common nesting birds and 200 to 500 feet for special status nesting birds and nesting raptors. No construction activities will be allowed within the buffer until nesting activity has ended to maintain compliance with *California Fish and Game Code*.

MM BIO-3 All trenches, holes, or pits shall be covered completely (by wooden boards, etc.) at the end of each workday. If complete covering is not feasible, ramps or fencing may be used instead. Ramps would not exceed a 2-to-1 slope. Fencing would require installation of a silt-fence for at least the first 12 inches above ground accompanied by taller fencing that exceeded 3 feet in height. Prior to starting work each day, or continuing work after a prolonged break, all trenches, holes, or pits shall be inspected by construction personnel for any trapped wildlife. If any wildlife becomes trapped, it shall either be safely removed or provided a method of egress and allowed to leave prior to continuing any further construction activity.

MM BIO-4 Per the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), the District shall retain a qualified Biologist to conduct a pre-construction survey for the burrowing owl between 14 and 30 days prior to any ground disturbance by the Project. The pre-construction survey shall include the area of proposed disturbance plus a 500-foot buffer (if access is available).

If an active burrow is observed outside the breeding season (September 1 to January 31) and it cannot be avoided, the burrowing owl shall be passively excluded from the burrow following methods described in CDFG 2012. One-way doors shall be used to exclude owls from the burrows; doors shall be left in place for at least 48 hours. Once the burrow is determined to be unoccupied, the burrow shall be closed by a qualified Biologist who shall excavate the burrow using hand tools. Prior to excluding an owl from an active burrow, a receptor burrow survey shall be conducted to confirm that at least two potentially suitable unoccupied burrows are within approximately 688 feet prior to installation of the one-way door. If two natural receptor burrows are not located, one artificial burrow shall be created for every burrow that would be closed.

If an active burrow is observed outside the breeding season (September 1 to January 31) and it can be avoided, the Biologist shall determine an appropriate protective buffer for the burrow based on CDFW guidelines. The buffer shall range from 160 feet to 1,640 feet depending on the level of impact and the time of year. The designated buffer will be clearly marked in the field and will be mapped as an environmentally sensitive area (ESA) on construction plans.

If an active burrow is observed during the breeding season (February 1 to August 31), the active burrow shall be protected until nesting activity has ended (i.e., all young have fledged from the burrow). The Biologist shall determine the appropriate protective buffer for the burrow based on CDFW guidelines. The buffer shall range from 650 to 1,640 feet depending on the level of impact and the time of year. The designated buffer will be clearly marked in the field and will be mapped as an ESA on construction plans. Construction shall be allowed to proceed when the qualified Biologist has determined that all fledglings have left the nest.

V. CULTURAL RESOURCES

This section is based on the *Phase I Archaeological and Paleontological Resources Inventory for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project* (Cultural Resource Study), prepared by Psomas for the Project (Psomas 2021d; Appendix C).

Methodology

Psomas requested the cultural resources literature and records search for the Project from the Eastern Information Center (EIC) at University of California, Riverside on September 29, 2020. The EIC completed its search on April 19, 2021. The EIC is a designated branch of the California Historical Resources Information System (CHRIS) and houses records regarding archaeological and historic resources recorded in Riverside County. The 2021 review consisted of an examination of the USGS' 7.5-minute Perris Quadrangle to determine if any cultural resources (e.g. archaeological sites, built environment resources) are recorded or if any cultural resources studies have been conducted on the Project site or within a 1-mile radius of the Project site. Data sources consulted at the EIC include archaeological records, Archaeological Determinations of Eligibility (DOE), historic maps, and the Historic Property Data File (HPDF) maintained by the Office of Historic Preservation (OHP). The HPDF contains listings for the California Register of Historical Resources (CRHR) and/or the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI).

Psomas also submitted a request to the Native American Heritage Commission (NAHC) on October 9, 2020, to review the Sacred Lands File database regarding the possibility of Native American cultural resources and/or sacred places in the Project vicinity that are not documented on other databases. The NAHC completed its Sacred Lands File search on October 12, 2020.

The results of the 2021 EIC cultural resources records searches identified 13 previously recorded archaeological resources within 1 mile of the Project site. The previously recorded resources include three historic archaeological sites, three prehistoric archaeological sites, one historic isolated artifact, and six isolated prehistoric artifacts. The historic sites and isolated finds consist of historic refuse (trash) and a segment of the California Southern Railway. The prehistoric sites and isolated finds include the remnants of prehistoric lithic scatters consisting of debitage (flaked stone left behind from tool manufacturing), stone tools (choppers and scrapers), and ground stone fragments (metates and pestles). None of the 13 archaeological resources are located within the proposed Project alignment. Furthermore, the NAHC Sacred Lands File search was negative for sacred sites.

Psomas surveyed the Pipeline Alignment and a 500-foot buffer on either side of the alignment on June 8, 2021. The entire Project alignment and buffer was surveyed by walking transects evenly spaced no more than 10 meters (32 feet) apart. The archaeologists examined all areas considered highly sensitive for cultural resources and the ground surface for the presence of the following:

- Prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools)
- Historic artifacts (e.g., metal, glass, ceramics)
- Sediment discoloration that might indicate the presence of a cultural midden
- Depressions and other features indicative of the former presence of structures or buildings (e.g., milling features, foundations).

The archaeologists maintained transect accuracy using a global positioning system (GPS) receiver and Project maps. A field notebook and a digital camera were used to record the survey conditions and findings.

The 2021 field survey (archaeological) identified one isolated historic archaeological feature (ISO-01) consisting of the remains of a post and barbed wire fence. However, it should be noted that ISO-01 is not eligible for the California Register of Historic Resources (CRHR) due to its limited data potential and lack of archaeological association. And while the study of agricultural features, such as wood posts and barbed wire often provide insight into how the landscape was used by early-settlers, these types of cultural resources are neither unique nor unusual for this region of California; therefore they are ineligible for the CRHR. No prehistoric archaeological resources were identified within the proposed Project alignment.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐

Less than Significant with Mitigation.

Impact Analysis

The EIC literature review and records search conducted for the Project site revealed that 13 cultural resources (archaeological resources) have been documented within 1 mile of the Project site. The previously recorded resources include three historic sites, three prehistoric sites, one historic isolated artifact, and six isolated prehistoric artifacts. None of the 13 cultural resources are within the proposed Project alignment.

As noted above, the 2021 field survey (archaeological) identified one isolated historic archaeological feature (ISO-01) consisting of the remains of a post and barbed wire fence. However, ISO-01 is not eligible for the CRHR due to its limited data potential and lack of archaeological association. And while the study of agricultural features, such as wood posts and barbed wire often provide insight into how the landscape was used by early-settlers, these types of cultural resources are neither unique nor unusual for this region of California; therefore ISO-01 is ineligible for the CRHR. Therefore, based on the review of archival material and the results of the field survey, it does not appear that the proposed Project alignment would result in a significant adverse impact to any eligible resources pursuant to Section 15064.5 of the State CEQA Guidelines. However, as indicated from the cultural resource records searches, numerous archaeological localities have been identified nearby. Excavation in native (i.e., previously undisturbed) soils to a depth of 8 to 10 feet would have the potential to encounter unknown resources, which would be considered a potentially significant impact. Implementation of **MMs CULT-1** through **CULT-6**, which address monitoring and treatment of cultural resources, development of a cultural resources monitoring plan, tribal monitoring agreements, evaluation of

discovered artifacts, disposition of inadvertent discoveries, and non-disclosure of reburial locations, would reduce potential impacts to a less than significant level.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Less Than Significant with Mitigation. There are no known formal cemeteries on the Project site. However, this does not preclude the possibility that individual burial sites may be discovered during grading activities. Implementation of **RR CULT-1**, which requires compliance with Section 7050.5 of the *California Health and Safety Code* and Section 5097.98 of the *California Public Resources Code,* would reduce potential impacts to less than significant levels.

REGULATORY REQUIREMENTS

RR CULT-1 Human Remains. If Native American human remains are encountered, Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 will be followed. If human remains are encountered no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours. Subsequently, the NAHC shall identify the person or persons it believes to be the "most likely descendant." The most likely descendant shall then make recommendations and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

MITIGATION MEASURES

MM CULT-1 Cultural Resources Treatment and Monitoring Agreement. At least 30 days prior to the start of any ground-disturbing activities, the District shall contact the Consulting Tribe(s) to develop Cultural Resource Treatment Monitoring Agreement(s) ("Agreement"). The Agreement(s) shall address the treatment of archaeological resources inadvertently discovered on the project site; project grading; ground disturbance and development scheduling; the designation, responsibilities, and participation of tribal monitor(s) during grading, excavation, and ground disturbing activities; and compensation for the tribal monitors, including overtime, weekend rates, and mileage reimbursements.

MM CULT-2 Develop a Cultural Resources Monitoring Plan. Prior to any grading activities, a Cultural Resources Monitoring Plan shall be prepared by a qualified archaeologist in consultation with the Consulting Tribe(s). The plan shall also identify the location and timing of cultural resources monitoring. The plan shall contain an allowance that the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the

Native American monitor and the lead agency, may reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall outline the appropriate measures to be followed in the event of unanticipated discovery of cultural resources during project implementation (including during the survey to occur following vegetation removal and monitoring during ground-disturbing activities). The plan shall identify avoidance as the preferred manner of mitigating impacts to cultural resources. The plan shall establish the criteria utilized to evaluate the historic significance (per CEQA) of the discoveries, methods of avoidance consistent with *CEQA Guidelines* Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to mitigate the effect of the project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, disposition of artifacts, curation of data, and dissemination of reports to local and state repositories, libraries, and interested professionals. A qualified archaeologist and Consulting Tribe(s) tribal monitor shall attend a pre-grade meeting with the District staff, the contractor, and appropriate subcontractors to discuss the monitoring program, including protocols to be followed in the event that cultural material is encountered.

MM CULT-3 Tribal Monitoring Agreements. A qualified archaeological monitor and a Consulting Tribe(s) monitor shall be present for ground-disturbing activities associated with the Project, and both the project archaeologist and Tribal Monitor(s) will make a determination as to the areas with a potential for encountering cultural material. At least seven business days prior to project grading, the District shall contact the tribal monitors to notify the Tribe of grading/excavation and the monitoring program/schedule, and to coordinate with the Tribe on the monitoring work schedule. Both the archaeologist and the tribal monitor shall have the authority to stop and redirect grading activities in order to evaluate the nature and significance of any archaeological resources discovered within the project limits. Such evaluation shall include culturally appropriate temporary and permanent treatment pursuant to the Cultural Resources Treatment and Monitoring Agreement, which may include avoidance of cultural resources, in-place preservation, data recovery, and/or reburial so the resources are not subject to further disturbance in perpetuity. Any reburial shall occur at a location predetermined between the District and the Consulting Tribe(s), details of which shall be addressed in the Cultural Resources Treatment and Monitoring Agreement in MM CR-1. Treatment may also include curation of the cultural resources at a tribal curation facility, as determined in discussion among the District, the project archaeologist, and the tribal representatives and addressed in the Cultural Resources Treatment and Monitoring Agreement referenced in MM CR-1.

MM CULT-4 Evaluation of Discovered Artifacts. All artifacts discovered at the development site shall be inventoried and analyzed by the project archaeologist and tribal monitor(s). A monitoring report will be prepared, detailing the methods and results of the monitoring program, as well as the disposition of any cultural material encountered. If no cultural material is encountered, a brief letter report will be sufficient to document monitoring activities.

MM CULT-5 Disposition of Inadvertent Discoveries. In the event that Native American cultural resources are recovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries with the tribe. the District shall relinquish ownership of all cultural resources,

including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:

1) Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource.
2) If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to MM CR-2 is the next preferable treatment measure. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments.
3) In the event that on-site reburial is not feasible, The District will enter into a curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.

MM CULT-6 Non-Disclosure of Reburial Locations. It is understood by all parties that unless otherwise required by law, the site of any reburial of culturally sensitive resources shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, pursuant to the specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies will be asked to withhold public disclosure information related to such reburial.

VI. ENERGY

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

Less than Significant Impact.

Construction

Project construction would require the use of construction equipment for asphalt removal, excavation, backfilling, and re-paving activities; all off-road construction equipment is assumed to use diesel fuel. Construction also includes the vehicles of construction workers and vendors traveling to and from the Project alignment. Off-road construction equipment use was calculated from the equipment data (i.e., mix, hours per day, horsepower, load factor, days per phase) provided in the CalEEMod construction output files included in Appendix A of this IS/MND. The total horsepower hours for the Project was then multiplied by fuel usage estimates per hours of construction activities included in the OFFROAD Model. Energy data can be found in Appendix D of this IS/MND.

Fuel consumption from construction worker, vendor, and delivery/haul trucks was calculated using the trip rates and distances provided in the CalEEMod construction output files. Total vehicle miles traveled (VMT) was then calculated for each type of construction-related trip and divided by the corresponding miles per gallon factor using CARB's EMissions FACtor 2017 (EMFAC 2017) model. EMFAC provides the total annual VMT and fuel consumed for each vehicle type. Construction vendor trucks were assumed to be primarily gasoline-fueled trucks, and delivery/haul trucks were primarily assumed to be heavy-duty diesel trucks. As shown in **Table 4-8**, a total of 2,090 gallons of gasoline and 2,423 gallons of diesel fuel is estimated to be consumed during construction.

TABLE 4-8
ENERGY USE DURING CONSTRUCTION

Source	Gasoline Fuel (gallons)	Diesel Fuel (gallons)
Off-road Construction Equipment	1,267	1,841
Worker commute trips	773	3
Vendor trips	49	1
On-road haul trips	1	578
Total	2,090	2,423
See Appendix D for Energy data. Data based on data from CalEEMod, OFFROAD, and EMFAC2014.		

Fuel energy consumed during construction would be temporary in nature and would not occur after completion of construction activities. It would also not represent a significant demand on energy resources. Furthermore, there are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the State. Therefore, the proposed construction activities would not result in inefficient, wasteful, or unnecessary fuel consumption.

Operation

The proposed Project is designed to develop water infrastructure to assist the District in meeting future demands from projected growth in the region. The Project contributes to this goal by conveying recycled water from the District's PVRWRF to North Trumble Road Recycled Water Storage Pond. No pumping stations or other means of actively conveying water are proposed for the proposed Project and, as such, no electricity or natural gas demand would be generated by the Project. Additionally, the proposed pipeline Project would not result in daily vehicle trips. Consequently, no energy use related to transportation fuels would be required. Therefore, energy use associated with the proposed Project would not result in an inefficient, wasteful, or unnecessary consumption of energy. A less than significant energy impact would result from implementation of the proposed Project.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

No Impact. As discussed above, the proposed Project would only use energy during the construction phase of the proposed Project. The Project contributes to this goal by conveying recycled water from the District's PVRWRF to the North Trumble Road Recycled Water Storage Pond. Because the operation of the proposed Project does not result in energy consumption and would assist in increasing the capacity for water conveyance in the local area, the proposed Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

MITIGATION MEASURES

There would be no significant impacts and no mitigation is required.

VII. GEOLOGY AND SOILS

Information in this section is derived from the *City of Perris General Plan 2030; City of Perris General Plan 2030 Draft Environmental Impact Report; Geotechnical Baseline And Design Report, Dunlap Road Recycled Water Pipeline Replacement* prepared by Converse Consultants for the Project (Converse 2020; Appendix F); *Phase I Archaeological and Paleontological Resources Inventory* prepared by Psomas for the Project (Psomas 2021d; Appendix C); and publicly available data such as from the California Geological Survey.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒

No Impact. No earthquake faults are mapped within the City of Perris; therefore, there are no earthquake faults that traverse the Project alignment. According to the City of Perris General Plan 2030, the City of Perris and Perris Valley lies between the San Jacinto Fault and the Elsinore Fault, within the Perris Block, a 20- by 50-mile mass of crystalline rocks generated in the Cretaceous time period. The Perris Block is bound by the San Jacinto Fault to the east, the Elsinore Fault to the west, and the Cucamonga Fault to the north (Perris 2016b). There are no active or potentially active faults within the City of Perris or its Sphere of Influence; therefore, there are no Alquist-Priolo Earthquake Fault Zones within the City. There would be no impact related to the rupture of a known earthquake fault, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
ii) Strong seismic ground shaking?				

Less than Significant Impact. As discussed above, there are no active or potentially active faults within the City of Perris. However, the Project alignment, as with the entire Southern California region, is subject to secondary effects from earthquakes, including ground shaking due to future earthquakes on regionally active faults. Strong ground shaking may occur in the City due to earthquakes on several active or potentially active faults in the region including the San Andreas, San Jacinto, Elsinore, Chino Alt 1, Chino Alt 2, and San Joaquin Hills Fault Zones. The nearest known active fault zones that are capable of seismic ground shaking are San Jacinto, located approximately 10 miles east and northeast of the Project alignment and Elsinore, located approximately 11.5 miles southwest of the Project alignment (Converse 2020).

While the Project alignment and proposed facilities could potentially be subject to moderate or severe ground shaking effects from earthquakes, the Project would be designed and constructed in conformance with applicable seismic safety requirements per the Perris General Plan 2030 Safety Element and the 2019 California Building Standards Code (Perris 2016b; CBC 2019). Impacts would be less than significant, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

Less than Significant Impact. Liquefaction can occur when saturated, cohesionless soils lose their strength due to the buildup of excess pore water pressure during cycling loading, such as that induced by earthquakes, causing it to behave as a liquid. The types of soils that are most susceptible to liquefaction are loose, saturated, fine-to-medium grained, cohesionless solids. Surface and subsurface manifestations from liquefaction can include loss of support for structures, excessive (i.e., dynamic) settlement, the occurrence of sand boils (i.e., sand and water ejected at the surface), ground lurching (i.e., movement of low density soil materials on a bluff, steep slope, or embankment), and other effects such as lateral spreading (i.e., horizontal displacement on sloped surfaces as a result of underlying liquefaction).

According to the *Geotechnical Baseline and Design Report Dunlap Road Recycled Water Pipeline Replacement,* the Project alignment is located within an area not evaluated for liquefaction by The State of California. However, the alignment is located in a liquefaction zone designated as "moderate" per the County of Riverside. Due to the absence of shallow groundwater, the risk of liquefaction is considered low (Converse 2020). Therefore, the effects of liquefaction will be readily managed through soil engineering techniques consistent with the 2019 California Building Standards Code (BSC 2019). As such, there would be less than significant impacts related to seismic-related ground failure, including liquefaction, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iv) Landslides?	☐	☐	☐	☒

No Impact. The occurrence of landslides and other types of slope failures (e.g., rock falls and mudflows) is influenced by several factors, including slope grade, geologic and soil characteristics, moisture levels, and vegetation cover. Landslides can be triggered by a variety of potentially destabilizing conditions or events, such as gravity, fires, precipitation, grading, and seismic activity. The Perris General Plan 2030 indicates there are several isolated areas susceptible to earthquake-induced landslides, occurring in the western and southern portions of the City. These areas could be susceptible to seismically induced landslides and rock falls. (Perris 2016b). In addition, due to the relatively flat topography along the alignment, landslides are not

considered a risk (Converse 2020). The Project alignment is located approximately 3.0 miles from the nearest areas susceptible to earthquake-induced landslides. Further, the proposed Project would not create any new slopes or unstable land surfaces that would be subject to landslides. Once construction is complete the pipeline and related infrastructure would be located underground and the ground surface would be returned to existing conditions. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐

Less than Significant with Mitigation. The largest source of erosion and topsoil loss is uncontrolled drainage during construction. As discussed in more detail in Section X, Hydrology and Water Quality, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into "waters of the United States". Construction activities shall be conducted in compliance with the statewide NPDES General Permit for Storm Water Discharges Associated with the Construction and Land Disturbance Activities (Order No 2012-0006-DWQ, NPDES No. CAS000002), adopted by the State Water Resources Control Board on July 17, 2012. In compliance with the NPDES permit (**MM HYDRO-1** in Section X), erosion potential during construction of the proposed Project would be managed with Best Management Practices (BMPs) implemented on the Project alignment as part of a Storm Water Pollution Prevention Plan (SWPPP) during construction activities in accordance with NPDES requirements. Implementation of the BMPs would reduce construction-related erosion impacts to a less than significant level.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐

Less than Significant with Mitigation. Liquefaction and landslides are discussed above under Thresholds VII(a.iii) and VII(a.iv), respectively. As discussed, a significant impact related to liquefaction or landslides would not occur. Other soil engineering and/or geotechnical constraints identified for the Project alignment include compressible soils and collapsible soils. Ground subsidence and associated fissuring have occurred in a variety of places in Riverside County, due to falling and rising ground water tables. The Perris Valley is comprised of extensive alluvial deposits resulting from erosion of sediments from the San Jacinto Mountain Range. Alluvial valley regions, such as the Perris Valley, are particularly susceptible to subsidence. Depths of ground water in the City generally exceed 100 feet, but in the central and northeastern parts of the City's planning areas are comprised of materials considered susceptible to moderate to very high

liquefaction potential. Instances of settlement have been recorded in the San Jacinto Valley, but not within the Perris Valley. (Perris 2016b; Perris 2004).

According to the Geotechnical Report, regional mapping indicates that the alignment is generally underlain by Holocene-aged alluvial-valley deposits. Deposits are generally silt and clay with interbedded layers of sand. The proposed alignment is located on a broad, nearly flat alluvial plain and identified along the pipeline alignment are alluvial soils consisting of silty sand and sandy clay. Further, the alignment's center is underlain by very young, active alluvial deposits consisting of mostly clay with very little variation in soil composition. Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes. As discussed previously, due to the relatively flat topography along the alignment, landslides are not considered a risk. Further, due to the absence of shallow groundwater, the risk of liquefaction is considered low (Converse 2020). Additionally, according to the Geotechnical Report, the soil types encountered have a slight potential for collapse (Converse 2020). Therefore, potential impacts related to development on or within a geologic unit that is, or has the potential to become, unstable would be less than significant.

Further, the Project would adhere to all applicable standards and regulations during construction, including California Construction and General Industry Safety Orders, the Occupational Safety and Health Act, current amendments, and the Construction Safety Act (Converse 2020). In light of the above discussion and with adherence to all applicable regulations, the Project would ensure that potential impacts related to unstable soils would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐

Less than Significant with Mitigation. As previously discussed, the Project alignment is generally underlain by Holocene-aged alluvial-valley deposits with generally silt and clay deposits and interbedded layers of sand. The Project alignment is located on a broad, nearly flat alluvial plain and identified along the pipeline alignment are alluvial soils consisting of silty sand and sandy clay. Further, the alignment's center is underlain by very young, active alluvial deposits consisting of mostly clay with very little variation in soil composition.

According to the Geotechnical Report, the soil types encountered have a high expansion potential (Converse 2020), thus resulting in a potentially significant impact related to direct or indirect risks to life and property. The Project would adhere to all applicable standards and regulations during construction, including California Construction and General Industry Safety Orders, the Occupational Safety and Health Act, current amendments, and the Construction Safety Act (Converse 2020). In light of the above discussion and with adherence to all applicable regulations, the Project would ensure that potential impacts related to unstable soils would be less than significant. Additionally, the Geotechnical Report identifies recommendations related to general construction efforts, temporary sloped excavations, shoring design, and bore-and-jack recommendations, which are detailed in **MM GEO-1** and which would reduce impacts related expansive soils to less than significant levels.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

No Impact. The proposed Project would not involve the use of septic tanks or alternative wastewater disposal systems. There would be no impact and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Less than Significant with Mitigation. A paleontological records search was requested of the WSC, and results were received on May 19, 21. The results did not identify paleontological resources within the Project site or the 1-mile search buffer/radius of the Project alignment. The WSC noted that the geologic units underlying the Project site are mapped entirely as active valley deposits dating to the Holocene which is estimated to be between 5,000 years old and present. While Holocene alluvial units are of high preservation value, material found is unlikely to be fossil material due to the relatively modern associated dates of the deposits. However, the WSC also noted that if development requires any substantial depth of disturbance, the likelihood of reaching older Holocene or Late Pleistocene alluvial sediments would increase.

Additionally, a paleontological field survey was performed along the proposed Pipeline Alignment on June 8, 2021. No paleontological resources were identified within the proposed Project site during the field survey. Therefore, based on the review of the paleontological records search and results of the field survey, it does not appear that the proposed Project would result in a significant adverse impact to any significant paleontological resources.

As recommended by the WSC, **MM GEO-2** would require any substantial excavations in older Holocene or Late Pleistocene alluvial sediments be monitored closely to recover any fossil remains, and fossils recovered from such activities should be placed in an accredited scientific institution for the benefit of current and future generations. Accordingly, **MM GEO-2** requires the construction personnel to receive training by a qualified paleontologist regarding potential resources that may be encountered and the procedure to follow in the event of a discovery, and requires a qualified paleontologist to be retained if any resources are encountered to perform evaluation and reporting, as appropriate. Implementation of **MM GEO-2** would reduce potential impacts to a less than significant level.

MITIGATION MEASURES

Refer to **MM HYDRO-1** as stated in Section X, Hydrology and Water Quality.

MM GEO-1 Prior to approval of final plans and specifications for the Project, the contractor shall ensure that all recommendations detailed in the *Geotechnical Baseline and Design Report* (Converse 2020) prepared for the Project as well as any subsequent geotechnical studies be included on all grading and construction plans for implementation during excavation and construction activities. These recommendations include but are not limited to: general construction recommendations related to underground utility locating and protection; use of vertical braced excavations; temporary shoring; observation by qualified persons of all soils in exposed cuts; use of temporary, open-cut trenches; temporary shoring design; and bore-and-jack crossing recommendations.

MM GEO-2 Prior to site preparation or grading activities, construction personnel shall be instructed by a Project Paleontologist of the potential for encountering unique paleontological resources and instructed on steps to take in the event such resources are encountered. This shall include the provision of written materials to familiarize personnel with the range of resources that might be expected, the type of activities that may result in impacts, and the legal framework of paleontological resources protection. All construction personnel shall be instructed to stop work in the vicinity of a potential discovery until the Project Paleontologist, as appropriate, assesses the significance of the find and implements appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of paleontological resources is prohibited.

As needed paleontological monitoring will only be required onsite if ground disturbing activities occur within older Holocene or Late Pleistocene alluvial sediments. If any paleontological resources (e.g., plant or animal fossils) are encountered during ground disturbance, the Project Paleontologist will evaluate unanticipated discoveries and take appropriate measures to protect or preserve them for future study. The Paleontologist shall submit a report of findings that will also provide specific recommendations regarding further mitigation measures (i.e., paleontological monitoring) that may be appropriate. Where mitigation monitoring is appropriate, the program must include, but may not be limited to, the following measures:

- Assign a Paleontological Monitor, trained and equipped to allow the rapid removal of fossils with minimal construction delay, to the site full time during earth-disturbing activities.
- Divert earth-disturbing activities away from the immediate area of the discovery until the Paleontological Monitor has completed salvage. If construction personnel make the discovery, the Grading Contractor shall immediately divert construction and notify the Paleontological Monitor of the find.
- Prepare, identify, and curate all recovered fossils for documentation in the summary report and transfer to an appropriate depository (e.g., Western Science Center of Riverside County).
- Prepare and submit a technical report describing the identification, salvage, evaluation, and treatment of all fossils discovered during grading to the

District. Transfer collected specimens with a copy of the report to the depository.

VIII. GREENHOUSE GASES

Climate change refers to any significant change in climate, such as the average temperature, precipitation, or wind patterns, over a period of time. Climate change may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns have been associated with global warming, which is an average increase in the temperature of the atmosphere near the Earth's surface; this is attributed to an accumulation of greenhouse gas (GHG) emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn increases the Earth's surface temperature. Some GHGs occur naturally and are emitted into the atmosphere through natural processes, while others are created and emitted solely through human activities. The majority of climate scientists attribute climate change to the increase in GHG emissions generated by human activities.

GHGs, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). General discussions on climate change often include water vapor, O_3, and aerosols in the GHG category. Water vapor and atmospheric O_3 are not gases that are formed directly in the construction or operation of development projects, nor can they be controlled in these projects. Aerosols are not gases. While these elements have a role in climate change, they are not considered by regulatory bodies, such as CARB, or climate change groups, such as The Climate Registry, as gases to be reported or analyzed for control. Therefore, no further discussion of water vapor, O_3, or aerosols is provided herein.

GHGs vary widely in the power of their climatic effects; therefore, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both its potency and lifespan in the atmosphere as compared to CO_2. For example, since CH_4 and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the emission rate of that gas to produce the CO_2e emissions.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevada Mountains; could further exacerbate California's air quality problems; and could potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, Executive Order S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

AB 32, the California Global Warming Solutions Act of 2006 (*California Health and Safety Code* §38501), recognizes that California is the source of substantial amounts of GHG emissions. The statute states that:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands*

> *of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

In order to avert these consequences, AB 32 establishes a State goal of reducing GHG emissions to 1990 levels by the year 2020, which is a reduction of approximately 16 percent from forecasted emission levels, with further reductions to follow (CARB 2011). To help achieve this reduction, on November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, raising California's renewable energy goals to 33 percent by 2020.

California Executive Order B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce GHG emissions to 40 percent below 1990 levels by 2030 and directed State agencies with jurisdiction over GHG emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels.

On September 8, 2016, Governor Edmund G. "Jerry" Brown signed Senate Bill (SB) 32 to codify the GHG reduction goals of EO B-30-15, requiring the State to reduce GHG emissions by 40 percent below 1990 levels by 2030 (Health and Safety Code Section 38566). This goal is expected to keep the State on track to meeting the goal set by EO S-3-05 of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32's findings state that CARB will "achieve the state's more stringent greenhouse gas emission reductions in a manner that benefits the state's most disadvantaged communities and is transparent and accountable to the public and the Legislature."

Beginning in April 2008, the SCAQMD convened a Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold of 10,000 metric tons of CO_2 equivalent per year ($MTCO_2e$/yr) for projects where the SCAQMD is the lead agency (SCAQMD 2008b). In September 2010, the Working Group proposed that the 10,000 $MTCO_2e$/yr threshold be expanded to apply to industrial projects where SCAQMD is not the lead agency (SCAQMD 2010). The Working Group has not convened since the fall of 2010. As of October 2020, the proposal has not been considered or approved for use by the SCAQMD Board. However, as shown in **Table 4-3** in Section III, Air Quality, SCAQMD has published the 10,000 $MTCO_2e$/yr threshold without qualification.

In December 2019, the County of Riverside adopted the Climate Action Plan (CAP) Update (Riverside County 2019a). Appendix D of the CAP Update provides guidelines for determining the significance of new development project's GHG emissions.

According to the CAP, GHG emissions are only important in the context of cumulative emissions. The focus of the analysis is to answer the question of whether incremental contributions of GHGs are a cumulatively considerable contribution to climate change impacts. Further, the CAP includes a set of mitigation measures designed to substantially lessen cumulative impacts associated with GHG emissions. The CAP has the following components that fulfill cumulative mitigation for GHG emissions:

1. Provides community-wide GHG emissions reduction targets that would substantially lessen the cumulative impact;
2. Provides measures that new development projects shall follow to meet the County's reduction targets and substantially lessen the cumulative impact;
3. Provides a set of GHG emission inventories that provide quantitative facts and analysis for how the measures within the CAP Update meet the reduction targets that substantially lessen the cumulative impact; and

4. Provides an implementation, monitoring, and update program to ensure that the reduction targets are met.

The CAP Update provides measures for new development projects to follow to meet the County's reduction target and substantially lessen the cumulative impact of GHG emissions.

The CAP Update establishes a 3,000 $MTCO_2e$ per year screening threshold. For projects with estimated GHG emissions of 3,000 $MTCO_2e$ per year or less, the CAP requires two mitigation measures:

- Energy efficiency of at least five percent greater than January 2017 Title 24 requirements, and
- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

For projects that exceed the 3,000 $MTCO_2e$ per year emission level, the CAP requires evaluation of project GHG emissions reduction features using "screening tables." The 3,000 $MTCO_2e$ per year threshold is selected by the District as appropriate for the proposed Project.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Less than Significant Impact. Construction GHG emissions are generated by vehicle engine exhaust from construction equipment, on-road hauling trucks, vendor trips, and worker commuting trips. Construction GHG emissions were calculated concurrently with air quality criteria pollutant emissions using CalEEMod Version 2016.3.2 and the Project information as described in Section III, Air Quality.

The results are output in metric tons of CO_2 equivalent ($MTCO_2e$) for each year of construction. **Table 4-9** presents the construction-phase total and amortized GHG emissions for the Project.

TABLE 4-9
ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS FROM CONSTRUCTION

Source	Emissions ($MTCO_2e$)
Total Construction Emissions	**80**
Amortized Annual Emissions *	**3**

$MTCO_2e$: metric tons of carbon dioxide equivalent
* Combined total amortized over 30 years
Source: CalEEMod data in Appendix A.

GHG emissions generated from construction activities are finite and occur for a relatively short-term period. Unlike the numerous opportunities available to reduce a project's long-term GHG emissions through design features, operational restrictions, use of green-building materials, and other methods, GHG emissions-reduction measures for construction equipment are relatively limited. Therefore, SCAQMD staff recommended that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD 2008b). As shown in **Table 4-9**, the proposed Project would result in an estimated 3 $MTCO_2e$/yr when amortized.

Operational GHG emissions for the Project are estimated by including purchased electricity; the electricity embodied in water consumption; the energy associated with solid waste disposal; and mobile source emissions. The Project would not require additional District employees or generate regular vehicle trips, nor would it use natural gas. There would be no new water consumption or solid waste generation from operation of the new pipeline. As shown in **Table 4-9**, the total annual GHG emissions for the Project would be less than the 3,000 $MTCO_2e$/yr Riverside County threshold for new projects. There would be a less than significant impact.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

No Impact. As discussed above, the principal State plan and policy adopted for the purpose of reducing GHG emissions is AB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. The Project contributes to this goal by conveying recycled water from the District's PVRWRF to North Trumble Road Recycled Water Storage Pond. One implication of climate change is the decrease in the predictability of water availability and the reduction in water availability from river abstraction and groundwater resources, combined with the increase in water demand (IPCC 2014). The use of recycled water is an adaptive measure to reduce impacts to water availability from climate change. Therefore, the proposed Project would support the overall goals of adapting to climate change implications. Similarly, the Project supports the goals of Executive Orders S-3-05 and B-30-15. Therefore, the Project does not conflict with these plans and regulations. Implementation of the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. There would be no impact.

MITIGATION MEASURES

No mitigation is required.

IX. HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☒	☐

Less than Significant Impact. Project construction activities would require the transport and use of standard construction equipment and materials, some of which may include hazardous materials (e.g., fuel, lubricants, solvents) and chemicals. These activities would be conducted in compliance with existing federal, State, and local regulations. In addition, as discussed in Section VII, Geology and Soils, above, implementation of the proposed Project would require compliance with the NPDES Construction General Permit. Among other requirements, a SWPPP must be prepared to address all discharges from the construction site, including potential contaminants from construction equipment operation through implementation of appropriate BMPs. While specific BMPs would be determined during the SWPPP preparation process based on site- and Project-specific characteristics, they would include standard industry measures and guidelines contained in the NPDES Construction General Permit text. The potential for release of hazardous materials through upset or accident conditions would be minimized through implementation of a Cal-OSHA Construction Safety Plan and a hazard communication program during construction, as required under Section 5194 of the *California Code of Regulations*. The hazard communication program would include disclosure of the hazardous materials present on site, labels for hazardous materials containers, safety data sheets with information on the health effects of hazardous materials, and employee training on hazardous materials handling and reporting. In the event of an accidental release of hazardous substances, the Project contractor would comply with Section 1910.120 of the *Code of Federal Regulations*, which outlines protocol for hazardous waste clean-up operations and emergency response.

Routine operation of the proposed Project would not involve the use or transport of hazardous materials. The proposed pipeline would continue to convey recycled water through the District's Recycled Water Pipeline System. The Project alignment is located near several roads including Ellis Road to the south, Sherman Road to the east, and two arterials, San Jacinto Avenue to the north and I-215/SR-74 to the west (Perris 2008). These roadways may be used to transport hazardous materials; however, the proposed Project would neither increase the frequency of transport, nor would it introduce hazards that would increase the likelihood for accidental release of hazardous materials into the environment.

Through compliance with State and federal regulations, there would be a less than significant impact related to the transport, use, or disposal of hazardous materials or the release of hazardous materials into the environment would occur during construction, and no impact during long-term operation.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter-mile of an existing or proposed school?	☐	☐	☐	☒

No Impact. Based on review of aerial photography, there are no schools with ¼-mile of the proposed Project Alignment. As discussed above, Project construction activities would require the transport and use of hazardous materials and it is possible this transport may traverse on roadways proximate to schools. However, the materials needed for water conveyance are not acutely or unusually hazardous. As such, Project implementation would not result in the emissions of hazardous materials that would adversely affect schools. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

No Impact. An EDR Radius Map™ Report (EDR Report) was prepared for the proposed Project by Environmental Data Resources, Inc. (EDR 2020). Search parameters were based on a one-mile radius of the approximate center of the Project alignment, including both alignment options, and consisted of a search of federal, State, local, tribal, and other databases. These databases include both facilities that use, store, and/or generate hazardous materials; and those that have had a hazardous materials release. The complete list of databases and additional information regarding the identified sites can be found in Appendix E.

According to the EDR Report, there are no hazardous materials sites identified on the Cortese List, compiled pursuant to Section 65962.5 of the Government Code within the search radius. Also, no sites are identified within or overlapping the public ROW comprising the Project alignment. However, a release of hazardous materials nearby the Project alignment may have resulted in contamination of shallow soils and/or groundwater in the area surrounding the release.

The following two hazardous materials sites are identified within approximately 0.62 miles to the Dunlap Pipeline Alignment:

- **MAR ILS OT MK ANNEX (Riverside, CA).** This site is the first site listed in a cluster of two sites identified in the (Environstar) database. The site is detailed a Formerly Used Defense Site (FUDS). The current status is listed as “inactive and needs evaluation”.

- **MARCH AFB ILS OUTER (Perris, CA).** This site is the second site listed in a cluster of two sites identified in the FUDS database. The current status is listed as a property ”Properties without a project” and the National Priorities List status is “not listed”.

The two sites within one mile of the pipeline alignment are identified for permitting associated with transport, use, or generation of hazardous materials and/or procedural violations related to hazardous materials handling. Neither site would impact the Project. No hazardous materials releases near the Project alignment have been reported. Therefore, there would be no impact related to known hazardous materials.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would 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 result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☒	☐

Less than Significant Impact. The Project alignment is located within an adopted Airport Land Use Plan for March Air Reserve Base/Inland Port Airport (March ARB/IPA) and is within two miles of the Perris Valley Airport, a public use airport. Perris Valley Airport is located at 2091 Goetz Road approximately 1.70 miles to the southeast of the Project. The airport is a privately-owned public-use airport providing ultralight plane rides, skydiving, and balloon rides. (Perris 2008, Perris 2016b). The Project alignment is located within two miles of the Perris Valley Airport, however as indicated in the General Plan Safety Element, the Project alignment is not within the airport’s sphere of influence (Perris 2016b).

March ARB/IPA is located approximately 6.5 miles northeast of the Project. Much of the City is within the influence of the County of Riverside’s Airport Land Use Compatibility Plan (ALUCP), which includes the 2014 March ARB/IPA ALUCP (Perris 2016b). The Project alignment is located in C2, a flight corridor zone identified in the 2014 March ARB/IPA ALUCP, which prohibits (1) highly noise-sensitive outdoor nonresidential uses and (2) hazards to flight including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations (Perris 2016a). However, the Project alignment is located outside all noise areas designated on the March ARB/IPA Noise Contour Map (Perris 2016b).

As discussed in this IS/MND, once construction is complete, the recycled water pipeline and associated infrastructure would be entirely underground and operations would be limited to the occasional inspection and maintenance visits from the District employees. There are no nearby residential communities, industrial, or business operations in the Project vicinity. Therefore, the Project would be consistent with the 2014 March ARB/IPA ALUCP and would not expose additional people to safety hazards or excessive noise related to airport operations. There would be a less than significant impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Less than Significant Impact. The emergency response plan in effect in the County of Riverside is the *Riverside County Operational Area Emergency Operations Plan* (EOP), adopted in August 2019. The EOP defines the roles of various County agencies in emergency preparedness, emergency response, and hazard mitigation. The Riverside County Emergency Management Department is responsible for planning for and managing emergency responses. The County's *Local Hazard Mitigation Plan*, adopted on September 18, 2018, includes assessments of the nature, locations, probabilities, and severities of a wide variety of hazards, as well as mitigation goals and strategies and action plans for reducing disaster risks (Riverside County 2019).

Construction of the proposed Project would occur within roadway easement; full road closures are not anticipated. A portion of Dunlap Drive would result in a temporary closure; however; it is not an active emergency or local traffic route. Implementation of a Traffic Control Plan for the Project, as discussed in Section 3.3, would ensure access to hospitals, emergency response centers, school locations, communication facilities, highways, bridges, and airports are maintained. As such, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. There would be a less than significant impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
h) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

No Impact. According to the Fire and Resource Assessment Program *Very High Fire Hazard Severity Zones in LRA As Recommended by CAL FIRE* map for the City of Perris, the Project alignment is not located within or near any areas designated a Very High Fire Hazard Severity Zone (VHFHSZ) in either a Local Responsibility Area or a State Responsibility Area. The nearest VHFHSZ-designated area is located approximately 2.75 miles to the northwest and west (CAL FIRE 2009). There would be no impacts related to wildfires, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

X. HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐

Less than Significant with Mitigation. Potential impacts of construction activities on water quality focus on sediments, turbidity, and pollutants associated with sediments. Construction-related activities that are primarily responsible for sediment releases are related to exposing soils to potential mobilization by rainfall, runoff, and wind. These activities include any type of earth-disturbance activities. The proposed Project would involve temporary earth-disturbance activities associated with removal, trenching, and backfilling which would generate sediments along the pipeline alignment. Non-sediment-related pollutants that are also of concern during construction include waste construction materials and chemicals, liquid products, and petroleum products used in building construction or the maintenance of heavy equipment. Construction associated with the Project would involve use of vehicles and equipment with the potential to leak pollutants onto the ground surface and leach into the ground surface. These pollutants would then have the potential to be transported via surface runoff into a local water body. The potential for release of these materials via runoff represents a potentially significant impact.

Implementation of **MM HYDRO-1** would reduce any potential impacts to downstream waters resulting from construction activities on the Project alignment to less than significant. During long-term operations following installation of the proposed underground pipeline, storm water runoff in the Project area would be essentially the same as the existing conditions.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒

No Impact. Project implementation would not increase the amount impervious surface area within the Project area. Dunlap Drive is currently unpaved and would remain unpaved after the pipeline is installed. Pre- to post-project conditions would not see any change in the amount of surface runoff and would not interfere substantially with groundwater recharge. The Project would facilitate continued conveyance of treated recycled water to meet the District's current and anticipated demands, and implementation of the pipeline would not drive increased groundwater withdrawals. There would no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course or a stream or river or through the addition of impervious surfaces, in a manner that would:	☐	☐	☒	☐
i) Result in substantial erosion or siltation on- or off-site?				
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐

Less than Significant Impact. The proposed Project would be located primarily within existing public ROW that is currently developed with an unpaved road. Dunlap Drive would experience temporary disturbance during construction activities; however, the road would be returned to its existing condition and the drainage pattern would not be altered. There would be no increase in impervious surface areas associated with the proposed Project, which would not result in any change to the existing drainage pattern within or surrounding the proposed Project alignment. Therefore, the Project would not result in substantial erosion or siltation, substantially increase the rate or amount of surface runoff, or create or contribute runoff that would exceed storm drainage capacity. Impacts related to change in the drainage pattern would be less than significant, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course or a stream or river or through the addition of impervious surfaces, in a manner that would:	☐	☐	☐	☒
iv) Impede or redirect flood flows?				

No Impact. According to Exhibit S-9, Planning Area 5 Flood Zones, of the *City of Perris General Plan Safety Element*, The Project alignment is located in a Federal Emergency Management Agency (FEMA) zone AE Flood-Floodway (Perris 2016b). The San Jacinto River watercourse channel bisects the proposed pipeline alignment; however, the pipeline would be located underground, including at its crossing of the San Jacinto River, and would not impede or redirect flood flows. Additionally, implementation of the proposed Project will not add impervious surfaces to the Project alignment. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

No Impact. As discussed under Threshold X(c.iv) above, the proposed Project is identified by FEMA as located in a Floodway zone. There are inland water bodies in and near the City capable of producing a seiche, such as Perris Reservoir, Mystic Lake, Poorman's Reservoir, Diamond Valley Lake, and Canyon Lake; however, the likelihood of seiche effects reaching the Project alignment is low due to intervening topography and physical distance of at least 4.5 miles to the nearest body of water (between Dunlap Drive and the Perris Reservoir). Due to a distance of approximately 35 miles between the Project alignment and the Pacific Ocean, there is no tsunami risk. Once construction is complete, the proposed Project would be located underground and would not release pollutants in the instance of a flood. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

No Impact. As discussed under Thresholds X(a) through X(c), the Project would have no impacts related to water quality or groundwater management. During construction, appropriate water quality BMPs consistent with the NPDES Construction General Permit would be implemented (**MM HYDRO-1**). As such, the proposed Project would not obstruct implementation of a water quality control plan or sustainable groundwater management plan. There would be no impact, and no mitigation is required.

MITIGATION MEASURES

MM HYDRO-1 Prior to initiation of construction, the District shall ensure that a Notice of Intent with the State Water Resources Control Board (SWRCB) has been filed in order to obtain coverage under the Construction General Permit. Pursuant to the permit requirements, the Construction Contractor shall develop a Storm Water Pollution Prevention Plan (SWPPP) that incorporates Best Management Practices (BMPs) for reducing or eliminating construction-related pollutants in the site runoff. The SWPPP shall include erosion- and sediment-control BMPs that meet or exceed measures required by the NPDES Construction General Permit, as well as BMPs that control the other potential construction-related pollutants. The SWPPP would be designed and implemented to address site-specific conditions related to Project construction and BMPs would be selected and implemented based on the phase of construction and weather conditions. The SWPPP would identify and describe

the sources of sediment and other pollutants that may affect the quality of storm water discharges; it would also ensure the implementation and maintenance of BMPs to reduce or eliminate sediment, pollutants adhering to sediment, and other non-sediment pollutants in storm water and non-storm water discharges. Examples of BMPs that may be used include the following:

- synthetic non-biodegradable rolled erosion control products (RECPs) including plastic netting, plastic mesh, synthetic fiber with netting, and bonded synthetic fibers;
- biodegradable RECPs including erosion control blankets/mates made of jute, wood fiber, straw, coconut fiber, and straw coconut fiber;
- chemical dust suppressants including mulch and fiber-based dust palliatives, salts and brines, non-petroleum-based organics, petroleum-based organics, synthetic polymers, clay additives, and electrochemical products;
- street sweeping and vacuuming;
- storm drain inlet protection consisting of a sediment filter or impounding area; and
- water conservation practices to avoid leaks and discharges.

XI. LAND USE AND PLANNING

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒

No Impact. The entirety of the Project alignment would be located within the existing unpaved roadway/public ROW. Construction of the Project would not result in temporary lane closures along Ellis Avenue or San Jacinto Road. Implementation of a Traffic Control Plan as described in Section 3.3 would maintain vehicular access to the community. Operationally, the proposed pipeline would be located below ground and would not limit access to, or divide, a local community. Therefore, the proposed Project would not physically divide an established community. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

No Impact. The Project does not propose to change any existing land use designations in the City and, pursuant to Section 53091(e) of the *California Government Code,* the proposed Project would be exempt from City zoning ordinances because it involves the construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electric energy by a local agency. Implementation of the proposed Project would not conflict with applicable plans, policies, and regulations. As discussed under Threshold IV(f), the Project would not conflict with the Western Riverside County MSHCP. There would be no impacts, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XII. MINERAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

No Impact. According to the City of Perris General Plan 2030 Environmental Impact Report, lands within the City and its Sphere of Influence are designated Mineral Resource Zones 3 (MRZ-3) and Mineral Resources Zone 4 (MRZ-4), as defined by the California Department of Conservation (DOC). MRZ-3 and MRZ-4 are areas containing known or inferred mineral occurrences of undetermined mineral resource significance (Perris 2004). Additionally, the California DOC does not list mining sites in the City (DOC 2016a). There would be no impacts related to the loss of availability of a known or locally-important mineral resources, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XIII. NOISE

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Less than Significant Impact.

Noise-Sensitive Receptors

Noise-sensitive land uses typically include residences, hospitals, convalescent and day care facilities, schools, and libraries, which could all be adversely affected by an increase in noise levels. The closest noise sensitive receptors are residences approximately 0.66 mile east of the project alignment.

Regulatory Background

For the evaluation of potential noise impacts, the District complies with the City of Perris Noise Ordinance.

City of Perris Municipal Code

Chapter 7.34, Noise Control, of the City of Perris Municipal Code contains the City of Perris Noise Ordinance. The Noise Ordinance states “Excessive noise levels are detrimental to the health and safety of individuals. Noise is considered a public nuisance, and the city discourages unnecessary, excessive or annoying noises from all sources.”

It is noted that the standards of municipal noise regulations cannot be applied to mobile noise sources (e.g., heavy trucks traveling on public roadways, trains, aircraft). Control of noise generated by these transportation sources is preempted by federal and State laws and is therefore not subject to the provisions of the City’s Noise Ordinance. However, the Noise Ordinance does apply to vehicles while they are on private property. All activities within the City are subject to the Noise Ordinance unless specifically exempted.

The following City of the Perris Noise Ordinance are relevant to the Project.

> Section 7.34.060 – Construction noise
>
> It is unlawful for any person between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on a legal holiday, with the exception of Columbus Day and Washington’s birthday, or on Sundays to erect, construct, demolish, excavate, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. Construction activity shall not exceed 80 dBA in residential zones in the city.

Construction Noise

The proposed Project involves construction of a linear water pipeline. Local residents would be subject to elevated noise levels due to the operation of Project-related construction equipment. The loudest noise on a typical pipeline construction project would be generated by a diesel-engine driven excavator, truck, or similar equipment, with a noise level of 88 decibels (dBA) measured at a distance of 50 feet. The nearest residences to the project alignment are approximately 3,500 feet away. At that distance, the loudest equipment noise level would be in the range of 42 to 51 dBA, which is substantially less than the Noise Ordinance limit of 80 dBA. As such, the construction noise impact would be less than significant.

Operational Noise

The proposed Project would not be noise-generating. The Project would involve occasional vehicle trips related to routine inspection and maintenance and would not involve any noise-generating activities. Operational noise produced from the pipeline would consequently be inaudible. There would no operational noise impact.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒

No Impact. There are no applicable City standards for vibration-induced annoyance or structural damage from vibration. Vibration impacts generally would occur within 20 to 30 feet from large construction vehicles. However, at residences 3,500 feet from the project construction activity, there would be no perceptible vibration. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) For a project located within the vicinity of a private airstrip or 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?	☐	☐	☐	☒

No Impact. The Project is not located within an airport land use plan or in the vicinity of a private airstrip or heliport. The Project involves the installation and operation of a recycled water pipeline and would not involve the exposure of people to aircraft noise. There would be no impact.

MITIGATION MEASURES

No mitigation is required.

XIV. POPULATION AND HOUSING

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

No Impact. The proposed Project involves the involves construction of replacement pipe for a recycled water pipeline for an existing water conveyance infrastructure, which would serve existing and planned future the District customers. The proposed Project would require routine checks by the District employees, which would occur in combination with existing maintenance activities in the City; therefore, no new employees are anticipated. As such, inspection and maintenance of the Project alignment will not require new staff and the Project is intended to serve existing the District customers or new customers within established or planned areas of the City. The Project would not extend water service into an area that is not currently developed or approved for future development; therefore, the Project would not result in either direct or indirect unplanned population growth. Additionally, the Project would not displace existing housing or population, resulting in construction of replacement housing elsewhere. There would be no impacts, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XV. PUBLIC SERVICES

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, and other public facilities?	☐	☐	☐	☒

No Impact. As discussed in Section XIV, Population and Housing, the Project would not result in unplanned population growth. Due to the nature of the proposed Project, no new demand for public services such as fire protection, police protection, schools, parks, libraries, or other public facilities would occur. Any increase in maintenance of the proposed facilities would be the responsibility of the District. There would be no impacts and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XVI. RECREATION

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

No Impact. As discussed in Section XIV Population and Housing, the Project would not result in unplanned population growth. Therefore, it would not directly or indirectly impact any local recreational facilities through increase of use, nor does the Project include recreational facilities or otherwise require their construction. There would be no impacts, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XVII. TRANSPORTATION

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

Less than Significant Impact. During construction, vehicle trips would be generated by trucks hauling materials and supplies, and workers commuting to and from the Project alignment. It is anticipated that these trips would occur throughout the workday and would not be concentrated during traffic peak hours. Project construction would primarily occur during daytime hours Monday through Friday. As discussed in Section 3.3, a Traffic Control Plan would be prepared as part of the Project and submitted and approved by the City's Engineering and Public Works Department. Implementation of appropriate measures during construction consistent with the Traffic Control Plan would ensure the circulation system would not be adversely affected. As such, the Project's construction traffic would not substantially impact the performance of the circulation system or associated plans, ordinances, or policies. The proposed Project would not result in long-term traffic generation, with operational traffic to be limited to minimal trips related to periodic pipeline inspection and maintenance. The proposed Project would not substantially affect existing public transit, bicycle, or pedestrian facilities.

The Project alignment is undeveloped disturbed land with farmland/agricultural uses nearby. The nearest residential community is located at the corner of Ellis Avenue and Sherman Way, 0.66 miles east of the alignment. Sidewalks are not present along Dunlap Drive from Ellis Avenue to San Jacinto Avenue or on Ellis Avenue between the I-215 and Sherman Road. There are Class I, II, and III on-road and off-road trails and/or bike routes throughout the City but not near the Project alignment or within the Project vicinity. Riverside Transit Agency provides fixed-route bus service in the City but the nearest service, Rt. 74, is approximately 2.0 miles from the Project alignment; therefore, service would not be interrupted by construction or operation. Additionally, Greyhound, Metrolink, and Amtrak service the City but their routes will also not be interrupted due to their station locations and routes. This section of Dunlap Drive in the City of Perris is presently an unpaved road; therefore, the construction would not impact pre-existing conditions and the road would be restored to pre-existing conditions following completion of construction.

As such, the proposed Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. There would be a less than significant impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?	☐	☐	☐	☒

No Impact. Section 15064.3(b)(1) of the State CEQA Guidelines refers to evaluating transportation impacts using VMT for land use projects. The proposed Project is not a land use project and would not generate any long-term change in traffic. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

No Impact. The proposed Project would not include the construction of hazardous design features (e.g., sharp curves or dangerous intersections), and would not result in incompatible uses with the surrounding developed area. Implementation of a Traffic Control Plan, as discussed in Section 3.3, would minimize potential traffic hazards during construction. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
d) Result in inadequate emergency access?	☐	☐	☒	☐

Less than Significant Impact. Construction of the proposed Project would occur almost entirely within the public ROW on Dunlap Drive, which is an unpaved road on undeveloped, disturbed land. Therefore, the Project is not anticipated to inhibit emergency access either during construction or operation. However, implementation of a Traffic Control Plan, as discussed in Section 3.3 for the Project would ensure access to hospitals, emergency response centers, school locations, communication facilities, highways, bridges, and airports are maintained. As such, the Project would not result in inadequate emergency access. There would be a less than significant impact, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XVIII. TRIBAL CULTURAL RESOURCES

Information in this section is derived from the EIC literature review and records search, the NAHC Sacred Lands File, and the Cultural Resource Study Phase I Archaeological and Paleontological Resources Inventory (Section V of this MND) prepared by Psomas for the Project (Psomas 2021d; Appendix C), and the District's consultation with Native American Tribal Representatives: consistent with Assembly Bill (AB) 52.

Consistent with requirements of AB 52, tribes that previously requested to be informed of the District's projects under AB 52 were mailed an informational letter, which describes the Project and requests any information regarding resources that may exist on or near the Project site.

Per AB 52, the District initiated consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe. On September 16, 2020 the District sent consultation notification letters to Native American groups on the District's Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation. **Table 4-10** *Native American Tribal Consultation Summary*, summarizes the District's consultation efforts. To date, the District has conducted consultation with four Native American Tribes: The Soboba Band of Luiseno Indians (Soboba), Rincon Band of Luiseño Indians (Rincon), Aqua Caliente Band of Cahuilla Indians, and Pechanga Band of Luiseno Indians (Pechanga).

TABLE 4-10
NATIVE AMERICAN TRIBAL CONSULTATION SUMMARY

Tribe/ Organization	Individual Contacted	Date Letter Mailed	Response Received	Consultation Held
Agua Caliente	Katie Croft	September 16, 2020	Accepted	October 28, 2020
Morongo	Travis Armstrong	September 16, 2020	No Response	N/A
Pechanga	Ebru Ozdil	September 16, 2020	Accepted	December 11, 2020
Rincon	Destiny Colocho	September 16, 2020	Accepted	October 22, 2020
San Manuel	Jessica Mauck	September 16, 2020	Declined	N/A
Soboba	Joseph Ontiveros	September 20, 2020	Accepted	October 28, 2020

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☐	☐	☒

No Impact. For purposes of impact analysis, a tribal cultural resource is considered a site, feature, place, cultural landscape, sacred place, or object which is of cultural value to a California Native American Tribe and is eligible for the CRHR or a local register. As indicated in Section V Cultural Resources of this MND, based on an EIC Information Center (EIC) record search and the results from the NAHC Sacred Lands File database there are no resources on the proposed Project alignment that are currently listed on the CRHR. Therefore, the proposed Project would not have an impact on tribal cultural resources associated with an impact to a resource that is listed or eligible for listing on the CRHR or a local register. No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

Less Than Significant with Mitigation. The second component of this threshold is if the proposed Project would impact "A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c)

of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe." Subdivision (c) states:

> A resource may be listed as an historical resource in the California Register if it meets any of the following CRHR criteria:
>
> (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
>
> (2) Is associated with the lives of persons important in our past.
>
> (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
>
> (4) Has yielded, or may be likely to yield, information important in prehistory or history.

As noted above, based on information available through the literature review and record searches at the EIC and the NAHC, there is no information available that indicates there are significant tribal resources within the proposed Project alignment that would be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. However, as noted above under Methodology, The District requested consultation with tribes that notified the District of a desire to be consulted with regarding projects under the District's jurisdiction.

In consultation meetings, Tribes highlighted their concerns for the general area and site in particular. Questions also arose about construction technology, biological features, and that they preferred soil to remain on-site even if monitoring results were negative. Tribes expressed concern with potential unearthing of unknown artifacts while grading the site. The request was made for tribal monitoring during construction.

Based on the cultural sensitivity of the area, tribal cultural resources may be present within the Project's proposed footprint, and the Project therefore has the potential to affect tribal cultural resources during ground-disturbing activities, such as clearing, trenching, and grading. Impacts are considered to be potentially significant. As such, an archaeological and Native American monitoring program would be implemented, as outlined above in mitigation measures **MM CUL-1** through **MM CUL-6**. **RR CUL-1** would also be implemented to avoid impacts to Native American human remains, if encountered.

MITIGATION MEASURES

Refer to **MM CUL-1** through **MM CUL-6,** as stated in Section V, Cultural Resources.

XIX. UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

No Impact. The proposed Project would involve the construction and operation of replacement pipe generally parallel to an existing recycled water pipeline for the District's water conveyance infrastructure. The Project would allow the continued flow of recycled water in the District's distribution system to serve existing and future customers. Implementation of the Project would not result in the relocation or construction of additional or expanded water distribution infrastructure. Also, there would be no wastewater generation or dry utility demand such that new or expanded facilities would be required. There would be no impacts, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐

Less than Significant Impact. A limited volume of water would be used during construction for dust suppression. There would be no long-term demand for water as a result of the Project. Based on the nominal water use expected during construction, the Project's demands would be met with existing supplies. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

No Impact. The Project would not involve wastewater generation; therefore, no wastewater treatment would be required. There would be no impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Less than Significant Impact. A finite volume of solid waste would be generated during construction, including construction materials packaging, and miscellaneous waste such as food wrappers and beverage containers. Solid waste from the project would likely be disposed of at either the Badlands Sanitary Landfill, located in Moreno Valley, or the El Sobrante Landfill, located in Corona. The two landfills would have sufficient capacity to serve increased development within the City under the City of Perris General Plan 2030 (Perris 2004).

The Badlands Landfill has a remaining capacity of approximately 15.7 million cubic yards and a maximum permitted throughput of 4,800 tons per day; and the El Sobrante Landfill has a remaining capacity of approximately 144.0 million cubic yards and a maximum permitted throughput of 16,054 tons per day (CalRecycle 2020a, 2020b). Therefore, both of these landfills have sufficient capacity to accommodate the minimal amount of waste generated by construction of the Project. There would be less than significant impact, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

No Impact. As discussed under Threshold XIX(d), solid waste debris would be disposed of at a permitted landfill. AB 939, also known as the Integrated Waste Management Act, mandates the reduction of solid waste disposal in landfills by requiring a minimum of 50 percent diversion rate. Accordingly, at least half of the potential construction waste would be diverted from landfill disposal. Implementation of the proposed Project would not inhibit the City's compliance with State solid waste regulations. There would be no impact would occur, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XX. WILDFIRE

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

No Impact. According to the Fire and Resource Assessment Program *Very High Fire Hazard Severity Zones in LRA As Recommended by CAL FIRE* map for the City of Perris, the Project alignment is not located within or near any areas designated a VHFHSZ in either a Local Responsibility Area or a State Responsibility Area. The nearest VHFHSZ-designated area is located approximately 3.0 miles to the southwest and 2.5 miles to the northwest (CAL FIRE 2009). There would be no impacts related to wildfires, and no mitigation is required.

MITIGATION MEASURES

No mitigation is required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Does the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

Less than Significant with Mitigation. As described throughout the analysis in Section 4.0, with the incorporation of the identified mitigation measures, implementation of the Project would not degrade the quality of the environment; would not substantially reduce the habitats of fish or wildlife species; would not cause a fish or wildlife population to drop below self-sustaining levels; would not threaten to eliminate a plant or animal; and would not eliminate important examples of major periods of California history or prehistory regardless of which site option is selected. With respect to the quality of the environment, the Project would not preclude the ability to achieve long-term environmental goals.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Does the project:				
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

Less than Significant with Mitigation. While the Project may have the potential to impact the environment, feasible mitigation measures would be implemented to reduce these impacts to a less than significant level. Also, all identified mitigation measures are related to construction-period impacts. The likelihood of another construction project occurring at the same time in the immediate vicinity, which would be required to potentially result in a cumulative impact related to aesthetics, biological resources, cultural resources, geology and soils (paleontology only), hydrology and water quality, or tribal cultural resources, is remote and not reasonably foreseeable. Therefore, there would be less than significant cumulative impacts.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Less than Significant with Mitigation. Based on the analysis of the above-listed topics, the Project could have the potential to impact human beings, either directly or indirectly; however, the implementation of the mitigation measures described throughout this document would reduce all potential impacts to less than significant levels. With implementation of identified mitigation measures, the Project would not cause substantial adverse impacts on humans, either directly or indirectly.

Fish and Wildlife Determination

(Per Section 21089(b) of the Public Resources Code, all project applicants and public agencies subject to the California Environmental Quality Act shall pay a Fish and Game filing fee for each proposed project that would adversely affect wildlife resources.)*

Based on the responses contained in this Environmental Checklist, there is no evidence that the project has a potential for a change that would adversely affect wildlife resources or the habitat upon which the wildlife depends. Has the presumption of adverse effect set forth in 14 CCR 753.5 (d) been rebutted by substantial evidence?

__ Yes (Certificate of Fee Exemption and County Administrative fee required)

_X_ No (Pay fee)

***Note:** Fish and Game Code Section 711.4(c)(2)(A) states that projects that are Categorically Exempt from CEQA are also exempt from filing fee.

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Appendix A

CalEEMod Calculations

EMWD Dunlap Pipeline - Riverside-South Coast County, Winter

EMWD Dunlap Pipeline

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	22.00	1000sqft	0.51	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Assume max disturbance of approx. 2,200 ft x 10 ft

Construction Phase - Durations based on 80 lineal feet per day with some time for delay

Off-road Equipment - No dozer required for asphalt/concrete demo

Off-road Equipment - Paving equipment per engineering judgment

Off-road Equipment - Trenching/pipe installation equipment per engineering judgment

Demolition -

Trips and VMT - Paving vendor trips for asphalt
Trenching vendor trips average for pipe and supplies; hauling trips for excavated soils and new base

Construction Off-road Equipment Mitigation -

Landscape Equipment - No operational landscaping

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	35.00
tblConstructionPhase	NumDays	5.00	35.00
tblConstructionPhase	PhaseEndDate	3/12/2021	4/16/2021
tblConstructionPhase	PhaseEndDate	3/19/2021	4/23/2021
tblConstructionPhase	PhaseStartDate	3/13/2021	3/8/2021
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Other General Industrial Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2021	3.0794	28.2863	29.1779	0.0529	0.9088	1.4319	2.3406	0.2113	1.3373	1.5485			5,121.3001	1.2212	0.0000	5,151.8293
Maximum	**3.0794**	**28.2863**	**29.1779**	**0.0529**	**0.9088**	**1.4319**	**2.3406**	**0.2113**	**1.3373**	**1.5485**			**5,121.3001**	**1.2212**	**0.0000**	**5,151.8293**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.0794	28.2863	29.1779	0.0529	0.7561	1.4319	2.1879	0.1882	1.3373	1.5254			5,121.3001	1.2212	0.0000	5,151.8293
Maximum	**3.0794**	**28.2863**	**29.1779**	**0.0529**	**0.7561**	**1.4319**	**2.1879**	**0.1882**	**1.3373**	**1.5254**			**5,121.3001**	**1.2212**	**0.0000**	**5,151.8293**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**16.80**	**0.00**	**6.52**	**10.95**	**0.00**	**1.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**	**0.0000**	**5.1300e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**	**0.0000**	**5.1300e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	4/16/2021	5	35	
2	Paving	Paving	3/8/2021	4/23/2021	5	35	
3	Trenching	Trenching	3/1/2021	4/16/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.51

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Trenching	Excavators	1	8.00	158	0.38
Trenching	Cranes	1	8.00	231	0.29
Trenching	Forklifts	1	4.00	89	0.20
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Trenching	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Other General Industrial Equipment	1	8.00	88	0.34
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	13.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	2.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2504	0.0000	0.2504	0.0379	0.0000	0.0379			0.0000			0.0000
Off-Road	0.6657	5.8816	7.0644	0.0109		0.3408	0.3408		0.3274	0.3274			1,044.0148	0.1804		1,048.5245
Total	**0.6657**	**5.8816**	**7.0644**	**0.0109**	**0.2504**	**0.3408**	**0.5912**	**0.0379**	**0.3274**	**0.3653**			**1,044.0148**	**0.1804**		**1,048.5245**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.8500e-003	0.2501	0.0381	8.4000e-004	0.0200	7.7000e-004	0.0208	5.4800e-003	7.3000e-004	6.2100e-003			89.0574	5.8000e-003		89.2025
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0372	0.0224	0.2387	7.7000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242			76.4155	1.7700e-003		76.4596
Total	**0.0431**	**0.2724**	**0.2768**	**1.6100e-003**	**0.1094**	**1.3000e-003**	**0.1107**	**0.0292**	**1.2200e-003**	**0.0304**			**165.4729**	**7.5700e-003**		**165.6621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0977	0.0000	0.0977	0.0148	0.0000	0.0148			0.0000			0.0000
Off-Road	0.6657	5.8816	7.0644	0.0109		0.3408	0.3408		0.3274	0.3274			1,044.0148	0.1804		1,048.5245
Total	**0.6657**	**5.8816**	**7.0644**	**0.0109**	**0.0977**	**0.3408**	**0.4384**	**0.0148**	**0.3274**	**0.3422**			**1,044.0148**	**0.1804**		**1,048.5245**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.8500e-003	0.2501	0.0381	8.4000e-004	0.0200	7.7000e-004	0.0208	5.4800e-003	7.3000e-004	6.2100e-003			89.0574	5.8000e-003		89.2025
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0372	0.0224	0.2387	7.7000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242			76.4155	1.7700e-003		76.4596
Total	**0.0431**	**0.2724**	**0.2768**	**1.6100e-003**	**0.1094**	**1.3000e-003**	**0.1107**	**0.0292**	**1.2200e-003**	**0.0304**			**165.4729**	**7.5700e-003**		**165.6621**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.7606	7.7904	8.9887	0.0136		0.4203	0.4203		0.3866	0.3866			1,315.8618	0.4256		1,326.5012
Paving	0.0382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7988**	**7.7904**	**8.9887**	**0.0136**		**0.4203**	**0.4203**		**0.3866**	**0.3866**			**1,315.8618**	**0.4256**		**1,326.5012**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	4.9600e-003	0.1835	0.0391	5.0000e-004	0.0219	3.6000e-004	0.0223	5.9300e-003	3.5000e-004	6.2700e-003			52.5946	4.3600e-003		52.7036
Worker	0.0605	0.0363	0.3880	1.2500e-003	0.2716	8.6000e-004	0.2725	0.0695	7.9000e-004	0.0703			124.1752	2.8700e-003		124.2469
Total	**0.0654**	**0.2198**	**0.4270**	**1.7500e-003**	**0.2936**	**1.2200e-003**	**0.2948**	**0.0755**	**1.1400e-003**	**0.0766**			**176.7698**	**7.2300e-003**		**176.9505**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7606	7.7904	8.9887	0.0136		0.4203	0.4203		0.3866	0.3866			1,315.8618	0.4256		1,326.5012
Paving	0.0382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7988**	**7.7904**	**8.9887**	**0.0136**		**0.4203**	**0.4203**		**0.3866**	**0.3866**			**1,315.8618**	**0.4256**		**1,326.5012**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	4.9600e-003	0.1835	0.0391	5.0000e-004	0.0219	3.6000e-004	0.0223	5.9300e-003	3.5000e-004	6.2700e-003			52.5946	4.3600e-003		52.7036
Worker	0.0605	0.0363	0.3880	1.2500e-003	0.2716	8.6000e-004	0.2725	0.0695	7.9000e-004	0.0703			124.1752	2.8700e-003		124.2469
Total	**0.0654**	**0.2198**	**0.4270**	**1.7500e-003**	**0.2936**	**1.2200e-003**	**0.2948**	**0.0755**	**1.1400e-003**	**0.0766**			**176.7698**	**7.2300e-003**		**176.9505**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4097	12.9588	11.7914	0.0199		0.6641	0.6641		0.6169	0.6169			1,889.3421	0.5710		1,903.6163
Total	**1.4097**	**12.9588**	**11.7914**	**0.0199**		**0.6641**	**0.6641**		**0.6169**	**0.6169**			**1,889.3421**	**0.5710**		**1,903.6163**

Unmitigated Construction Off-Site

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

Category	lb/day												lb/day			
Hauling	0.0220	0.9378	0.1429	3.1500e-003	0.0750	2.8800e-003	0.0778	0.0206	2.7500e-003	0.0233			333.9652	0.0218		334.5094
Vendor	4.9600e-003	0.1835	0.0391	5.0000e-004	0.0128	3.6000e-004	0.0132	3.6900e-003	3.5000e-004	4.0300e-003			52.5946	4.3600e-003		52.7036
Worker	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454			143.2790	3.3100e-003		143.3618
Total	**0.0967**	**1.1632**	**0.6296**	**5.0900e-003**	**0.2554**	**4.2300e-003**	**0.2597**	**0.0687**	**4.0100e-003**	**0.0727**			**529.8388**	**0.0294**		**530.5747**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4097	12.9588	11.7914	0.0199		0.6641	0.6641		0.6169	0.6169			1,889.3421	0.5710		1,903.6163
Total	**1.4097**	**12.9588**	**11.7914**	**0.0199**		**0.6641**	**0.6641**		**0.6169**	**0.6169**			**1,889.3421**	**0.5710**		**1,903.6163**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0220	0.9378	0.1429	3.1500e-003	0.0750	2.8800e-003	0.0778	0.0206	2.7500e-003	0.0233			333.9652	0.0218		334.5094
Vendor	4.9600e-003	0.1835	0.0391	5.0000e-004	0.0128	3.6000e-004	0.0132	3.6900e-003	3.5000e-004	4.0300e-003			52.5946	4.3600e-003		52.7036
Worker	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454			143.2790	3.3100e-003		143.3618

Total	**0.0967**	**1.1632**	**0.6296**	**5.0900e-003**	**0.2554**	**4.2300e-003**	**0.2597**	**0.0687**	**4.0100e-003**	**0.0727**			**529.8388**	**0.0294**		**530.5747**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Unmitigated	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**		**5.1300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**		**5.1300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMWD Dunlap Pipeline

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	22.00	1000sqft	0.51	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Assume max disturbance of approx. 2,200 ft x 10 ft

Construction Phase - Durations based on 80 lineal feet per day with some time for delay

Off-road Equipment - No dozer required for asphalt/concrete demo

Off-road Equipment - Paving equipment per engineering judgment

Off-road Equipment - Trenching/pipe installation equipment per engineering judgment

Demolition -

Trips and VMT - Paving vendor trips for asphalt

Trenching vendor trips average for pipe and supplies; hauling trips for excavated soils and new base

Construction Off-road Equipment Mitigation -

Landscape Equipment - No operational landscaping

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	35.00
tblConstructionPhase	NumDays	5.00	35.00
tblConstructionPhase	PhaseEndDate	3/12/2021	4/16/2021
tblConstructionPhase	PhaseEndDate	3/19/2021	4/23/2021
tblConstructionPhase	PhaseStartDate	3/13/2021	3/8/2021
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Other General Industrial Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2021	3.0806	28.2782	29.3967	0.0534	0.9088	1.4318	2.3406	0.2113	1.3372	1.5485			5,175.7541	1.2191	0.0000	5,206.2315
Maximum	**3.0806**	**28.2782**	**29.3967**	**0.0534**	**0.9088**	**1.4318**	**2.3406**	**0.2113**	**1.3372**	**1.5485**			**5,175.7541**	**1.2191**	**0.0000**	**5,206.2315**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.0806	28.2782	29.3967	0.0534	0.7561	1.4318	2.1879	0.1882	1.3372	1.5253			5,175.7541	1.2191	0.0000	5,206.2315
Maximum	**3.0806**	**28.2782**	**29.3967**	**0.0534**	**0.7561**	**1.4318**	**2.1879**	**0.1882**	**1.3372**	**1.5253**			**5,175.7541**	**1.2191**	**0.0000**	**5,206.2315**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**16.80**	**0.00**	**6.52**	**10.95**	**0.00**	**1.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**	**0.0000**	**5.1300e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**	**0.0000**	**5.1300e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	4/16/2021	5	35	
2	Paving	Paving	3/8/2021	4/23/2021	5	35	
3	Trenching	Trenching	3/1/2021	4/16/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.51

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Trenching	Excavators	1	8.00	158	0.38
Trenching	Cranes	1	8.00	231	0.29
Trenching	Forklifts	1	4.00	89	0.20
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Trenching	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Other General Industrial Equipment	1	8.00	88	0.34
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	13.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	2.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2504	0.0000	0.2504	0.0379	0.0000	0.0379			0.0000			0.0000
Off-Road	0.6657	5.8816	7.0644	0.0109		0.3408	0.3408		0.3274	0.3274			1,044.0148	0.1804		1,048.5245
Total	**0.6657**	**5.8816**	**7.0644**	**0.0109**	**0.2504**	**0.3408**	**0.5912**	**0.0379**	**0.3274**	**0.3653**			**1,044.0148**	**0.1804**		**1,048.5245**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5600e-003	0.2484	0.0327	8.6000e-004	0.0200	7.6000e-004	0.0208	5.4800e-003	7.2000e-004	6.2000e-003			91.3526	5.3100e-003		91.4852
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0379	0.0216	0.2958	8.5000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242			85.1801	2.0300e-003		85.2309
Total	**0.0435**	**0.2700**	**0.3284**	**1.7100e-003**	**0.1094**	**1.2900e-003**	**0.1107**	**0.0292**	**1.2100e-003**	**0.0304**			**176.5327**	**7.3400e-003**		**176.7161**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0977	0.0000	0.0977	0.0148	0.0000	0.0148			0.0000			0.0000
Off-Road	0.6657	5.8816	7.0644	0.0109		0.3408	0.3408		0.3274	0.3274			1,044.0148	0.1804		1,048.5245
Total	**0.6657**	**5.8816**	**7.0644**	**0.0109**	**0.0977**	**0.3408**	**0.4384**	**0.0148**	**0.3274**	**0.3422**			**1,044.0148**	**0.1804**		**1,048.5245**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5600e-003	0.2484	0.0327	8.6000e-004	0.0200	7.6000e-004	0.0208	5.4800e-003	7.2000e-004	6.2000e-003			91.3526	5.3100e-003		91.4852
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0379	0.0216	0.2958	8.5000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242			85.1801	2.0300e-003		85.2309
Total	**0.0435**	**0.2700**	**0.3284**	**1.7100e-003**	**0.1094**	**1.2900e-003**	**0.1107**	**0.0292**	**1.2100e-003**	**0.0304**			**176.5327**	**7.3400e-003**		**176.7161**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.7606	7.7904	8.9887	0.0136		0.4203	0.4203		0.3866	0.3866			1,315.8618	0.4256		1,326.5012
Paving	0.0382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7988**	**7.7904**	**8.9887**	**0.0136**		**0.4203**	**0.4203**		**0.3866**	**0.3866**			**1,315.8618**	**0.4256**		**1,326.5012**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	4.6700e-003	0.1851	0.0330	5.2000e-004	0.0219	3.5000e-004	0.0223	5.9300e-003	3.4000e-004	6.2600e-003			54.6502	3.9100e-003		54.7480
Worker	0.0616	0.0351	0.4806	1.3900e-003	0.2716	8.6000e-004	0.2725	0.0695	7.9000e-004	0.0703			138.4176	3.3000e-003		138.5001
Total	**0.0663**	**0.2202**	**0.5137**	**1.9100e-003**	**0.2936**	**1.2100e-003**	**0.2948**	**0.0755**	**1.1300e-003**	**0.0766**			**193.0678**	**7.2100e-003**		**193.2481**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7606	7.7904	8.9887	0.0136		0.4203	0.4203		0.3866	0.3866			1,315.8618	0.4256		1,326.5012
Paving	0.0382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7988**	**7.7904**	**8.9887**	**0.0136**		**0.4203**	**0.4203**		**0.3866**	**0.3866**			**1,315.8618**	**0.4256**		**1,326.5012**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	4.6700e-003	0.1851	0.0330	5.2000e-004	0.0219	3.5000e-004	0.0223	5.9300e-003	3.4000e-004	6.2600e-003			54.6502	3.9100e-003		54.7480
Worker	0.0616	0.0351	0.4806	1.3900e-003	0.2716	8.6000e-004	0.2725	0.0695	7.9000e-004	0.0703			138.4176	3.3000e-003		138.5001
Total	**0.0663**	**0.2202**	**0.5137**	**1.9100e-003**	**0.2936**	**1.2100e-003**	**0.2948**	**0.0755**	**1.1300e-003**	**0.0766**			**193.0678**	**7.2100e-003**		**193.2481**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4097	12.9588	11.7914	0.0199		0.6641	0.6641		0.6169	0.6169			1,889.3421	0.5710		1,903.6163
Total	**1.4097**	**12.9588**	**11.7914**	**0.0199**		**0.6641**	**0.6641**		**0.6169**	**0.6169**			**1,889.3421**	**0.5710**		**1,903.6163**

Unmitigated Construction Off-Site

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

Category	lb/day										lb/day					
Hauling	0.0209	0.9315	0.1225	3.2300e-003	0.0750	2.8400e-003	0.0778	0.0206	2.7100e-003	0.0233			342.5722	0.0199		343.0696
Vendor	4.6700e-003	0.1851	0.0330	5.2000e-004	0.0128	3.5000e-004	0.0132	3.6900e-003	3.4000e-004	4.0200e-003			54.6502	3.9100e-003		54.7480
Worker	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454			159.7126	3.8100e-003		159.8078
Total	**0.0966**	**1.1571**	**0.7101**	**5.3500e-003**	**0.2554**	**4.1800e-003**	**0.2596**	**0.0687**	**3.9600e-003**	**0.0727**			**556.9350**	**0.0276**		**557.6254**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4097	12.9588	11.7914	0.0199		0.6641	0.6641		0.6169	0.6169			1,889.3421	0.5710		1,903.6163
Total	**1.4097**	**12.9588**	**11.7914**	**0.0199**		**0.6641**	**0.6641**		**0.6169**	**0.6169**			**1,889.3421**	**0.5710**		**1,903.6163**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0209	0.9315	0.1225	3.2300e-003	0.0750	2.8400e-003	0.0778	0.0206	2.7100e-003	0.0233			342.5722	0.0199		343.0696
Vendor	4.6700e-003	0.1851	0.0330	5.2000e-004	0.0128	3.5000e-004	0.0132	3.6900e-003	3.4000e-004	4.0200e-003			54.6502	3.9100e-003		54.7480
Worker	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454			159.7126	3.8100e-003		159.8078

Total	**0.0966**	**1.1571**	**0.7101**	**5.3500e-003**	**0.2554**	**4.1800e-003**	**0.2596**	**0.0687**	**3.9600e-003**	**0.0727**			**556.9350**	**0.0276**		**557.6254**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Unmitigated	9.6800e-003	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**		**5.1300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005			4.8100e-003	1.0000e-005		5.1300e-003
Total	**9.6800e-003**	**2.0000e-005**	**2.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**			**4.8100e-003**	**1.0000e-005**		**5.1300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMWD Dunlap Pipeline

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	22.00	1000sqft	0.51	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Assume max disturbance of approx. 2,200 ft x 10 ft

Construction Phase - Durations based on 80 lineal feet per day with some time for delay

Off-road Equipment - No dozer required for asphalt/concrete demo

Off-road Equipment - Paving equipment per engineering judgment

Off-road Equipment - Trenching/pipe installation equipment per engineering judgment

Demolition -

Trips and VMT - Paving vendor trips for asphalt

Trenching vendor trips average for pipe and supplies; hauling trips for excavated soils and new base

Construction Off-road Equipment Mitigation -

Landscape Equipment - No operational landscaping

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	35.00
tblConstructionPhase	NumDays	5.00	35.00
tblConstructionPhase	PhaseEndDate	3/12/2021	4/16/2021
tblConstructionPhase	PhaseEndDate	3/19/2021	4/23/2021
tblConstructionPhase	PhaseStartDate	3/13/2021	3/8/2021
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Other General Industrial Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

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

Year	tons/yr										MT/yr					
2021	0.0536	0.4955	0.5113	9.3000e-004	0.0157	0.0251	0.0408	3.6500e-003	0.0234	0.0271			81.5832	0.0194	0.0000	82.0672
Maximum	**0.0536**	**0.4955**	**0.5113**	**9.3000e-004**	**0.0157**	**0.0251**	**0.0408**	**3.6500e-003**	**0.0234**	**0.0271**			**81.5832**	**0.0194**	**0.0000**	**82.0672**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0536	0.4955	0.5113	9.3000e-004	0.0130	0.0251	0.0381	3.2500e-003	0.0234	0.0267			81.5831	0.0194	0.0000	82.0672
Maximum	**0.0536**	**0.4955**	**0.5113**	**9.3000e-004**	**0.0130**	**0.0251**	**0.0381**	**3.2500e-003**	**0.0234**	**0.0267**			**81.5831**	**0.0194**	**0.0000**	**82.0672**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**17.00**	**0.00**	**6.57**	**10.96**	**0.00**	**1.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2021	5-31-2021	0.5265	0.5265
		Highest	0.5265	0.5265

2.2 Overall Operational

Unmitigated Operational

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

Category	tons/yr										MT/yr					
Area	1.7500e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000			5.5000e-004	0.0000	0.0000	5.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**1.7500e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**5.5000e-004**	**0.0000**	**0.0000**	**5.8000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7500e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000			5.5000e-004	0.0000	0.0000	5.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**1.7500e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**5.5000e-004**	**0.0000**	**0.0000**	**5.8000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	4/16/2021	5	35	
2	Paving	Paving	3/8/2021	4/23/2021	5	35	
3	Trenching	Trenching	3/1/2021	4/16/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.51

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Trenching	Excavators	1	8.00	158	0.38
Trenching	Cranes	1	8.00	231	0.29
Trenching	Forklifts	1	4.00	89	0.20
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Trenching	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Other General Industrial Equipment	1	8.00	88	0.34
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	13.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	2.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.3800e-003	0.0000	4.3800e-003	6.6000e-004	0.0000	6.6000e-004			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1029	0.1236	1.9000e-004		5.9600e-003	5.9600e-003		5.7300e-003	5.7300e-003			16.5745	2.8600e-003	0.0000	16.6461
Total	**0.0117**	**0.1029**	**0.1236**	**1.9000e-004**	**4.3800e-003**	**5.9600e-003**	**0.0103**	**6.6000e-004**	**5.7300e-003**	**6.3900e-003**			**16.5745**	**2.8600e-003**	**0.0000**	**16.6461**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	4.4400e-003	6.1000e-004	1.0000e-005	3.4000e-004	1.0000e-005	3.6000e-004	9.0000e-005	1.0000e-005	1.1000e-004			1.4350	9.0000e-005	0.0000	1.4372

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.0000e-004	4.4100e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004			1.2444	3.0000e-005	0.0000	1.2451
Total	**7.0000e-004**	**4.8400e-003**	**5.0200e-003**	**2.0000e-005**	**1.8800e-003**	**2.0000e-005**	**1.9100e-003**	**5.0000e-004**	**2.0000e-005**	**5.3000e-004**			**2.6794**	**1.2000e-004**	**0.0000**	**2.6823**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7100e-003	0.0000	1.7100e-003	2.6000e-004	0.0000	2.6000e-004			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1029	0.1236	1.9000e-004		5.9600e-003	5.9600e-003		5.7300e-003	5.7300e-003			16.5745	2.8600e-003	0.0000	16.6461
Total	**0.0117**	**0.1029**	**0.1236**	**1.9000e-004**	**1.7100e-003**	**5.9600e-003**	**7.6700e-003**	**2.6000e-004**	**5.7300e-003**	**5.9900e-003**			**16.5745**	**2.8600e-003**	**0.0000**	**16.6461**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	4.4400e-003	6.1000e-004	1.0000e-005	3.4000e-004	1.0000e-005	3.6000e-004	9.0000e-005	1.0000e-005	1.1000e-004			1.4350	9.0000e-005	0.0000	1.4372
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.0000e-004	4.4100e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004			1.2444	3.0000e-005	0.0000	1.2451
Total	**7.0000e-004**	**4.8400e-003**	**5.0200e-003**	**2.0000e-005**	**1.8800e-003**	**2.0000e-005**	**1.9100e-003**	**5.0000e-004**	**2.0000e-005**	**5.3000e-004**			**2.6794**	**1.2000e-004**	**0.0000**	**2.6823**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0133	0.1363	0.1573	2.4000e-004		7.3500e-003	7.3500e-003		6.7700e-003	6.7700e-003			20.8903	6.7600e-003	0.0000	21.0592
Paving	6.7000e-004					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**0.0140**	**0.1363**	**0.1573**	**2.4000e-004**		**7.3500e-003**	**7.3500e-003**		**6.7700e-003**	**6.7700e-003**			**20.8903**	**6.7600e-003**	**0.0000**	**21.0592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	3.2600e-003	6.3000e-004	1.0000e-005	3.8000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.1000e-004			0.8539	7.0000e-005	0.0000	0.8555
Worker	9.8000e-004	6.6000e-004	7.1600e-003	2.0000e-005	4.6700e-003	1.0000e-005	4.6800e-003	1.2000e-003	1.0000e-005	1.2100e-003			2.0221	5.0000e-005	0.0000	2.0233
Total	**1.0600e-003**	**3.9200e-003**	**7.7900e-003**	**3.0000e-005**	**5.0500e-003**	**2.0000e-005**	**5.0600e-003**	**1.3000e-003**	**2.0000e-005**	**1.3200e-003**			**2.8760**	**1.2000e-004**	**0.0000**	**2.8788**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	0.0133	0.1363	0.1573	2.4000e-004		7.3500e-003	7.3500e-003		6.7700e-003	6.7700e-003			20.8903	6.7600e-003	0.0000	21.0592
Paving	6.7000e-004					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**0.0140**	**0.1363**	**0.1573**	**2.4000e-004**		**7.3500e-003**	**7.3500e-003**		**6.7700e-003**	**6.7700e-003**			**20.8903**	**6.7600e-003**	**0.0000**	**21.0592**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	3.2600e-003	6.3000e-004	1.0000e-005	3.8000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.1000e-004			0.8539	7.0000e-005	0.0000	0.8555
Worker	9.8000e-004	6.6000e-004	7.1600e-003	2.0000e-005	4.6700e-003	1.0000e-005	4.6800e-003	1.2000e-003	1.0000e-005	1.2100e-003			2.0221	5.0000e-005	0.0000	2.0233
Total	**1.0600e-003**	**3.9200e-003**	**7.7900e-003**	**3.0000e-005**	**5.0500e-003**	**2.0000e-005**	**5.0600e-003**	**1.3000e-003**	**2.0000e-005**	**1.3200e-003**			**2.8760**	**1.2000e-004**	**0.0000**	**2.8788**

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0247	0.2268	0.2064	3.5000e-004		0.0116	0.0116		0.0108	0.0108			29.9947	9.0600e-003	0.0000	30.2213
Total	**0.0247**	**0.2268**	**0.2064**	**3.5000e-004**		**0.0116**	**0.0116**		**0.0108**	**0.0108**			**29.9947**	**9.0600e-003**	**0.0000**	**30.2213**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.7000e-004	0.0167	2.3000e-003	6.0000e-005	1.2900e-003	5.0000e-005	1.3400e-003	3.5000e-004	5.0000e-005	4.0000e-004			5.3812	3.3000e-004	0.0000	5.3894
Vendor	8.0000e-005	3.2600e-003	6.3000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005			0.8539	7.0000e-005	0.0000	0.8555
Worker	1.1300e-003	7.6000e-004	8.2600e-003	3.0000e-005	2.8900e-003	2.0000e-005	2.9000e-003	7.7000e-004	2.0000e-005	7.8000e-004			2.3332	5.0000e-005	0.0000	2.3346
Total	**1.5800e-003**	**0.0207**	**0.0112**	**1.0000e-004**	**4.4000e-003**	**8.0000e-005**	**4.4700e-003**	**1.1800e-003**	**8.0000e-005**	**1.2500e-003**			**8.5683**	**4.5000e-004**	**0.0000**	**8.5795**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0247	0.2268	0.2064	3.5000e-004		0.0116	0.0116		0.0108	0.0108			29.9947	9.0600e-003	0.0000	30.2213
Total	**0.0247**	**0.2268**	**0.2064**	**3.5000e-004**		**0.0116**	**0.0116**		**0.0108**	**0.0108**			**29.9947**	**9.0600e-003**	**0.0000**	**30.2213**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.7000e-004	0.0167	2.3000e-003	6.0000e-005	1.2900e-003	5.0000e-005	1.3400e-003	3.5000e-004	5.0000e-005	4.0000e-004			5.3812	3.3000e-004	0.0000	5.3894
Vendor	8.0000e-005	3.2600e-003	6.3000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005			0.8539	7.0000e-005	0.0000	0.8555
Worker	1.1300e-003	7.6000e-004	8.2600e-003	3.0000e-005	2.8900e-003	2.0000e-005	2.9000e-003	7.7000e-004	2.0000e-005	7.8000e-004			2.3332	5.0000e-005	0.0000	2.3346
Total	**1.5800e-003**	**0.0207**	**0.0112**	**1.0000e-004**	**4.4000e-003**	**8.0000e-005**	**4.4700e-003**	**1.1800e-003**	**8.0000e-005**	**1.2500e-003**			**8.5683**	**4.5000e-004**	**0.0000**	**8.5795**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7500e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000			5.5000e-004	0.0000	0.0000	5.8000e-004
Unmitigated	1.7500e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000			5.5000e-004	0.0000	0.0000	5.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.1000e-004					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4200e-003					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000			5.5000e-004	0.0000	0.0000	5.8000e-004
Total	**1.7600e-003**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**5.5000e-004**	**0.0000**	**0.0000**	**5.8000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.1000e-004					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4200e-003					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000			5.5000e-004	0.0000	0.0000	5.8000e-004
Total	**1.7600e-003**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**			**5.5000e-004**	**0.0000**	**0.0000**	**5.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Resources Assessment

October 22, 2020

Joe Broadhead
Principal Water Resources
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, California 92572-8300

VIA EMAIL
broadhej@emwd.org

Subject: Biological Resources Assessment for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project

Mr. Broadhead:

This Letter Report presents the findings of a biological resources assessment for the proposed Dunlap Drive Recycled Water Pipeline Replacement Project (hereinafter referred to as the "project"). The purpose of the survey was to evaluate potential biological constraints on the project.

PROJECT DESCRIPTION AND LOCATION

The proposed project involves the replacement of section of pipe for a recycled water pipeline in the City of Perris and in unincorporated Riverside County, California (Exhibit 1). The proposed pipeline replacement is located parallel to the existing pipeline and Dunlap Drive. The replacement pipe would measure 2,000 linear feet and would extend north from Ellis Avenue and end approximately 550 feet north of the San Jacinto River crossing.

The majority of the planned replacement pipeline would be 36-inches in diameter; however, the pipeline segment crossing the San Jacinto River would be increased to 48-inches in diameter allowing for a jack-and-bore installation beneath the San Jacinto River. All pipeline segments would be constructed within a 30-foot utility easement. Construction methods used to install the pipeline would primarily include an open-cut-trenching method; however, the jack-and-bore method would be used to ensure the project avoids impacts to the San Jacinto River. The proposed pipeline minimum open cut width of 6.5 feet would be required within the existing easement.

SURVEY METHODS

Psomas Senior Biologist Allison Rudalevige visited the proposed project location on October 2, 2020, to conduct a general plant and wildlife survey, map existing vegetation communities, and perform an assessment of potential jurisdictional waters. The area surveyed for potential direct impacts associated with the proposed project include the existing 30-foot project easement, the proposed jacking pit, and the proposed receiving pit, collectively referred to as the "project boundary". The vegetation within a 500-foot buffer along the project alignment (the centerline proposed pipeline) was mapped to assist in assessing potential indirect impacts associated with construction noise. This area is hereafter referred to as the "survey area". Within the

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survey area, the project boundary and a 50-foot buffer was surveyed for evidence of recent pooling, such as the presence of cracked top soils.

All plant species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Baldwin et al. (2012). Nomenclature of plant taxa conform to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2020a) for special status species and the Jepson eFlora (Jepson Flora Project 2020) for all other taxa.

All wildlife species detected during the course of the survey were documented in field notes. Taxonomy and nomenclature for wildlife generally follows the *Special Animals List* (CDFW 2020b) for special status species and, for other species, Crother (2017) for amphibians and reptiles, the American Ornithological Society (AOS 2020) for birds, and the Smithsonian National Museum of Natural History (SNMNH 2011) for mammals.

Prior to the survey, a literature review was conducted to identify special status plants, wildlife, and habitats that have been reported to occur in the vicinity of the survey area. Resources reviewed included the California Native Plant Society's (CNPS') Inventory of Rare and Endangered Plants (CNPS 2020), the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CDFW 2020c), and the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Mapping (County of Riverside 2020). Database searches included the USGS' Lake Elsinore, Perris, Romoland, and Steele Peak 7.5-minute quadrangles.

SURVEY RESULTS

This section discusses biological resources observed or determined to have potential to occur within the survey area. Assessments of potential impacts to these resources are discussed in the Project Impacts section of this report.

Literature Review Results

The survey area is located on the U.S. Geological Survey's (USGS') Perris 7.5-minute quadrangle (Exhibit 2). Topography within the survey area is relatively flat at an elevation of approximately 1,415 feet above mean sea level (msl). One drainage, the San Jacinto River, crosses the survey area. Soils mapped in the survey area include riverwash; Willows silty clay; Willows silty clay, saline-alkali; Willows silty clay, deep, saline-alkali; and Willows silty clay, deep, strongly saline-alkali (Exhibit 3).

The survey area occurs within the plan boundaries for both the MSHCP and the Stephens' Kangaroo Rat Habitat Conservation Plan (SKRHCP). Regulatory requirements and "take" coverage associated with both plans apply only to plan participants. The project is not currently covered under either the MSHCP or SKRHCP.

Existing Conditions

The survey area contains the following vegetation types and other areas: disturbed alkali sink, ruderal, disturbed riverine herb, active field cropland, fallow field cropland, disturbed, and developed (Exhibit 4).

Disturbed Alkali Sink

Disturbed alkali sink occurs along the Ellis Avenue road edge near the southern end of the survey area. This area contains a mix of plant species, many of which are known to occur in saline or alkaline conditions. Native species include alkali weed (*Cressa truxillensis*), salt grass (*Distichlis spicata*), bush seepweed (*Suaeda nigra*), silverscale (*Atriplex argentea*), willow weed (*Persicaria lapathifolia*), and

annual sunflower (*Helianthus annuus*). The vegetation is degraded (disturbed) by the presence of non-native species such as five-hook bassia (*Bassia hyssopifolia*), stinknet (*Oncosiphon pilulifer*), and red brome (*Bromus rubens*).

Ruderal

Ruderal vegetation occurs along Dunlap Drive, a portion of Ellis Avenue, and along the banks/berms of the San Jacinto River. This vegetation is dominated by a variety of non-native, weedy, senescent species such as black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), and non-native grasses. Most of the remnant grass species present were not identifiable at the time of the survey; however, evidence of wheat (*Triticum aestivum*), bromes (e.g., *Bromus rubens* or *Bromus diandrus*), and oats (*Avena* sp.) were observed in the survey area. Scattered silverscale also occurs in this vegetation type.

Disturbed Riverine Herb

Disturbed riverine herb occurs along the San Jacinto Riverbed. This vegetation type was dominated by alkali-mallow (*Malvella leprosa*), curly dock (*Rumex crispus*), and non-native grasses.

Active Field Cropland

Active field cropland occurs at the southern end of the survey area. This vegetation type consists of a field of alfalfa (*Medicago sativa*) that is being actively irrigated.

Fallow Field Cropland

Fallow field cropland occurs over most of the survey area on either side of Dunlap Drive. The area east of Dunlap Drive appears to have been tilled or disced relatively recently while the area to the west does not appear to have been actively managed as recently. Senescent, non-native grass occurs throughout the area. Species identification was not possible, but species likely present include wheat, bromes, and/or oats.

Disturbed

Disturbed areas consist of graded, dirt roads (e.g., Dunlap Drive). These areas are unvegetated.

Developed

The developed area consists of Ellis Avenue, which is a paved road at the southern end of the survey area.

Jurisdictional Resources and Evidence of Previous Pooling

One drainage feature, the San Jacinto River, occurs within the survey area. The San Jacinto River flows into Canyon Lake (also known as Railroad Canyon Reservoir). Water from Canyon Lake flows along the San Jacinto River and ultimately discharges into Lake Elsinore. This drainage has bed, banks, and indicators of Ordinary High Water Mark. It is likely subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the CDFW.

The proposed project is located on low-sloped areas mapped with clay soils known to support pooling of surface water for extended periods. Evidence of extended pooling was observed in the project boundary and immediate vicinity during the field survey. The evidence observed consisted of cracked soils in small depressions located in the disturbed alkali sink, the ruderal areas, and within the adjacent access road (Exhibit 5). The disturbed alkali sink also contains plant species that require long periods of inundation to survive. The presence of these plant species further reinforces the finding that the soils present in the

project boundary and vicinity likely support extended periods of pooling; however, pooling may still occur in areas where the plant species were not observed.

Wildlife Habitat

Given the rural nature of the landscape setting, wildlife species occurring on and in the vicinity of the survey area are expected to be relatively urban tolerant.

No fish, amphibian, or reptile species were observed during the survey; however, some amphibian and reptile species may not have been detectable during survey due, for instance, to nocturnal behavior patterns or estivation (extended dormancy due to heat or dryness). The San Jacinto River was dry at the time of the survey. Based on the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory Wetland Mapper, it may carry flow for extended periods during the growing season (USFWS 2020). Given the lack of perennial flow, fish species are not expected to occur but the survey area has limited potential to support some amphibian species such as western toad (*Bufo boreas*). Common reptile species expected to occur include western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), and southern alligator lizard (*Elgaria multicarinata*).

Common bird species observed in the survey area include red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), and western meadowlark (*Sturnella neglecta*). Other common species that may occur include western kingbird (*Tyrannus verticalis*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus [Carduelis] psaltria*), white-crowned sparrow (*Zonotrichia leucophrys*), and house sparrow (*Passer domesticus*).

One mammal species, San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) (a California Species of Special Concern) was directly observed during the survey and coyote (*Canis latrans*) scat was also observed. No burrow or other evidence denning by San Diego black-tailed jackrabbit was observed in the project boundary and it is not anticipated to be denning onsite. Additional mammal species may also be present but were undetectable during the survey due, for instance, to nocturnal activity patterns. Other common mammal species that may occur include deer mouse (*Peromyscus californicus*), California ground squirrel (*Otospermophilus beecheyi*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*).

Wildlife Movement

Within large, open space areas where few or no man-made or naturally occurring physical constraints to wildlife movement are present, wildlife corridors may not yet exist. However, once open space areas become constrained and/or fragmented as a result of urban development or the construction of physical obstacles (e.g., roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

The survey area is in a rural, agricultural landscape matrix. Regional wildlife movement may currently occur through agricultural areas between undeveloped open space around Lake Perris and the Badlands to the northeast and hills around Canyon Lake and Lake Elsinore to the southwest. The San Jacinto River provides a relatively unconstrained corridor for movement over most of this area. Local wildlife movement may occur between agriculture fields and the San Jacinto River.

Although, the project is not currently covered under the MSHCP, the regional planning associated with the plan provide a good framework for wildlife movement corridors. The survey area occurs at the

southwestern end of MSHCP Proposed Extension of Existing Core 4, which provides for movement of species between Lake Perris and areas downstream of the San Jacinto in Canyon Lake. It is also at the northeastern end of the MSHCP Proposed Constrained Linkage 19 (County of Riverside 2020).

Special Status Vegetation Types

The CDFW provides a list of vegetation Alliances, Associations, and Special Stands that are considered "sensitive natural communities" based on their rarity and threat (CDFW 2020d). Being dominated by non-native species, the active and fallow field croplands and ruderal areas would not be considered special status and are not listed as sensitive natural communities by the CDFW. The dominant species in the disturbed riparian herb portion of the survey area are not part of a sensitive natural community; however, these areas fall within the jurisdictional authority of the regulatory agencies, as discussed above. While the disturbed alkali sink has a mixture of species, two predominant species observed—alkali weed and salt grass—are part of the *Cressa truxillensis – Distichlis spicata* Association, which is provisionally considered a sensitive natural community by the CDFW. Bush seepweed, also found in this area, is part of the *Suaeda moquinii* Association[1], which is considered a sensitive natural community by the CDFW.

Special Status Species

In the absence of California Environmental Quality Act (CEQA) thresholds formally approved by the Lead Agency, analysis of special status plant and wildlife species are based upon the thresholds discussed in Appendix G of the CEQA Guidelines. With regards to plants and animals, Section 15380 of the CEQA Guidelines independently defines "Endangered" and "Rare" species separately from the definitions of the California Endangered Species Act (CESA). Under CEQA, Endangered species of plants or animals are defined as those whose survival and reproduction in the wild are in immediate jeopardy, while Rare species are defined as those that (1) have such low numbers that they could become Endangered if their environment worsens or (2) are likely to become endangered within the foreseeable future (i.e., "threatened" as used in the FESA). In addition, a Lead Agency can consider a non-listed species (e.g., species with a California Rare Plant Rank [CRPR] and California Species of Special Concern [SSC]) to be treated as if it were Endangered, Rare, or Threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of "Rare" or "Endangered" in the project region.

Special Status Plant Species

Plants may be considered "special status" due to declining populations, vulnerability to habitat change, or restricted distributions. Several special status plant species have been reported in the vicinity of the project based on the results of the literature review (see Attachment A).

The following federally and/or State listed Endangered, Threatened, or Rare species have potential or limited potential to occur in the disturbed alkali sink and ruderal portions of the project boundary: Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), thread-leaved brodiaea (*Brodiaea filifolia*), spreading navarretia (*Navarretia fossalis*), and California Orcutt grass (*Orcuttia californica*).

In addition to species formally listed by the resource agencies, several special status species (species with a CRPR of 1 or 2) have been reported from the literature review. The following species with a CRPR of 1 or 2 have potential or limited potential to occur in disturbed alkali sink and ruderal portions of the project boundary: chaparral sand-verbena (*Abronia villosa* var. *aurita*), South Coast saltscale (*Atriplex pacifica*), Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), smooth

[1] The current name for bush seepweed is *Suaeda nigra* (Jepson Flora Project 2020); the species was formally named *Suaeda moquinii*.

tarplant (*Centromadia pungens* ssp. *laevis*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), mud nama (*Nama stenocarpa*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*).

Species with a CRPR of 3 or 4 are not typically considered constraints on development.

Special Status Wildlife Species

Wildlife may be considered "special status" due to declining populations, vulnerability to habitat change, or restricted distributions. Several special status wildlife species have been reported in the vicinity of the survey area based on the results of the literature review (see Attachment A).

The following federally and/or State listed Endangered or Threatened species have potential or limited potential to occur in the survey area: Riverside fairy shrimp (*Streptocephalus woottoni*), tricolored blackbird (*Agelaius tricolor*), and Stephens' kangaroo rat (*Dipodomys stephensi*). In addition, Crotch bumble bee, a State Candidate for listing as Endangered, has potential to occur. Riverside fairy shrimp, Stephens' kangaroo rat, and Crotch bumble bee have potential to occur in the disturbed alkali sink and ruderal portions of the project boundary. Tricolored blackbird may occur in the active agricultural area south of the project boundary.

In addition to species formally listed by the resource agencies, several special status species (e.g., SSC and California Fully Protected species) have been reported from the literature review. The following non-listed species have potential or limited potential to occur in the disturbed alkali sink and ruderal portions of the project boundary and may represent a constraint on development: western spadefoot (*Spea hammondii*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and southern grasshopper mouse (*Onychomys torridus ramona*).

Although none of these species were observed during the field survey, all still have potential to occur. Many of the species listed are not detectable during daylight hours, during the early fall, or without conducting multiple, detailed survey visits per approved survey protocols. Note, one raised dirt mound adjacent to the project boundary was covered with whitewash which may be associated with burrowing owl.

Critical Habitat

Critical Habitat is designated by the USFWS for the survival and recovery of species listed as Threatened or Endangered under the Federal Endangered Species Act (FESA). The survey area is located within the boundaries of mapped Critical Habitat for spreading navarretia.

PROJECT IMPACTS

This section presents a general impact analysis of the proposed project. All construction activities are anticipated to occur within project boundary as shown on Exhibit 4. Should any of the impact areas extend beyond these limits, additional analysis may be required.

Vegetation Types and Other Areas

The proposed project would impact disturbed alkali sink, ruderal, fallow field cropland, and disturbed areas. These impacts would be temporary and these areas would be allowed to return to their current

condition following project activities. Therefore, impacts are considered less than significant and no mitigation would be required.

Jurisdictional Resources

Impacts on waters under the regulatory authority of the USACE, the RWQCB, and/or the CDFW would require regulatory permitting. The use of a jack-and-bore method to install the pipeline under the San Jacinto River are anticipated to prevent direct impacts on jurisdictional waters.

Wildlife Movement

The proposed project is not expected to significantly impact regional or local wildlife movement because the project would not introduce any barriers to wildlife movement and only temporary construction-related impacts would occur. During construction, wildlife would not be able to move through the area of active construction, but they could move to accessible adjacent areas. Therefore, impacts are considered less than significant, and no mitigation would be required.

Special Status Plant Species

The proposed project may impact federal and/or state listed and non-listed special status plant species. Impacts on any special status plant species, if present, are potentially significant; additional surveys are recommended in the disturbed alkali sink and ruderal portions of the project boundary. Mitigation may be required based on the results of the surveys.

Special Status Wildlife Species

The proposed project may directly and/or indirectly impact federal and/or state listed wildlife species. Impacts on listed wildlife species, if present, would be significant. Listed species with potential to occur within the disturbed alkali sink and ruderal portions of the project boundary include Riverside fairy shrimp, Crotch bumble bee, and Stephens' kangaroo rat. Additional surveys are recommended to determine the presence of these species.

Impacts on non-listed, special status wildlife species, if present, have potential to be significant and additional surveys are also recommended to determine their presence and population status. The special status species with potential to occur within the disturbed alkali sink and ruderal portions of the project boundary include western spadefoot, burrowing owl, Los Angeles pocket mouse, Dulzura pocket mouse, northwestern San Diego pocket mouse, and southern grasshopper mouse. Mitigation may be required based on the results of any of these surveys.

Special status bird species, including tricolored blackbird, white-tailed kite, and loggerhead shrike, have potential to forage in the project boundary and have potential to nest within the study area adjacent to the project boundary. The limited and temporary impacts associated with the proposed project would not result in any significant impacts to foraging habitat. Impacts to nesting activity for any of the species, however, could be significant and impact avoidance measures would need to be implemented, if the species were determined to be nesting in the vicinity.

Critical Habitat

The proposed project would occur within the mapped boundaries of USFWS-designated Critical Habitat for spreading navarretia. If the proposed project requires engagement or approval from a federal agency, then a Section 7 consultation between that agency and the USFWS is required (regardless if the species is present or not). Prior to coordinating consultation, however, the occupancy status of the species within the

project boundary needs to be determined via focused surveys. If no federal agency engagement or approval is needed and no federally listed species are determined to be present, then no consultation with the USFWS is anticipated with respect to Critical Habitat.

Other Considerations

Water Quality

During construction, runoff carrying excessive silt, petroleum, or other chemical contaminants from construction equipment could potentially impact water quality in the San Jacinto River and, in turn, affect plant and wildlife species using adjacent habitat.

Noise

During active construction, temporary noise impacts have the potential to disrupt foraging, roosting, and/or denning activities for a variety of wildlife species. Construction noise could deter wildlife from using habitat adjacent to construction. Given that wildlife could move to accessible adjacent areas, noise impacts would be considered less than significant; no mitigation would be required.

Nesting Birds and Raptors

The Migratory Bird Treaty Act (MBTA) protects migratory birds and their nests and eggs, both common and special status. Bird species protected under the provisions of the MBTA are identified by the List of Migratory Birds (50 *Code of Federal Regulations* [CFR] §10.13, as amended). Since the 1970s, the MBTA has been interpreted to prohibit the accidental or "incidental" take of migratory birds. However, in December 2017, the acting Solicitor of the Department of the Interior issued a new memorandum disclaiming the interpretation of the MBTA as prohibiting incidental take of migratory birds (DOI 2017). In response to the federal changes in interpretation of the MBTA, the CDFW and the California Attorney General have issued an advisory affirming California's protections for migratory birds (CDFW and Attorney General 2018).

Multiple sections of *California Fish and Game Code* provide protection for nesting birds and raptors unless the *California Fish and Game Code* or its implementing regulations provide otherwise. Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically addresses raptors (i.e., birds of prey in the orders *Falconiformes* and *Strigiformes*) and makes it unlawful to take, possess, or destroy these birds or their nest or eggs. Section 3513 prohibits the take or possession of migratory non-game birds as designated by the MBTA or any part of such bird.

Migratory birds and raptors (both common and special status) have the potential to nest on adjacent powerline poles, in shrubs and trees, and on bare ground in the survey area. Take of active bird nests would be a violation of *California Fish and Game Code*.

Multiple Species Habitat Conservation Plan

The proposed project is located in the boundaries of the MSHCP. The Eastern Municipal Water District (EMWD) is not a signatory to the MSHCP Implementation Agreement. Therefore, the project does not require approval through the MSHCP process. The proposed project is located in lands proposed for conservation under the MSHCP (i.e., Criteria Areas). With implementation of the recommendations below, the project would not conflict with any conservation goals or objectives of the MSHCP.

Separately, approved participants in the MSHCP are authorized take of special status species covered under the MSHCP. If project-related impacts to the covered species are anticipated, per the results of the

recommended focused surveys, EMWD has the option to use the Participating Special Entity (PSE) process through the Riverside Conservation Authority to obtain take authorization and mitigate potential impacts for some of the species. Note that participation in the MSHCP does not guarantee automatic mitigation for impacts to all the listed species with potential to occur in the project boundaries (such as Riverside fairy shrimp); additional mitigation measures may be required as negotiated with the regulatory agencies.

RECOMMENDATIONS

The following measures are recommended to avoid, minimize, or mitigate for impacts on biological resources or to comply with federal, state, and/or local regulations:

1. Focused surveys for special status plant species with potential to occur in the project boundaries are recommended. Surveys should be performed by a qualified Biologist and follow approved survey protocol, which includes appropriate timing of surveys during the blooming period of each species with potential to occur. If special status plant species are present, then the qualified Biologist will evaluate the significance with respect to the number of individuals impacted and the status of the species. If avoidance of state or federally listed plant species is not feasible, then consultation with the resource agencies and/or compensatory mitigation may be required. If avoidance of non-listed, special status plant species is not feasible, then preservation of the top-soil and the associated seed bank will be preserved during construction and redistributed on the top of the impact area following construction activities.
2. Focused surveys for Riverside fairy shrimp are recommended prior to construction. The current USFWS survey protocol requires both wet and dry season surveys be conducted by a permitted Biologist. Wet season surveys are initiated following inundation and are conducted weekly over a 120-day period (and reinitiated if the ponding area dries and refills during the same wet season). If listed fairy shrimp are present in the impact area and avoidance is not feasible, then consultation with the resource agencies and/or compensatory mitigation may be required.
3. If suitable breeding habitat for spadefoot toad is determined to be present within the project boundary during the surveys for fairy shrimp and it cannot be avoided, a qualified biologist should conduct focused surveys to determine if the pooled habitat is supporting western spadefoot breeding activities. If the species are determined to not be absent, then no further recommendations are necessary. If the species are determined present and impacts are unavoidable, then an impact avoidance and minimization plan should be prepared and implemented. Measures may include installing exclusion fencing along the project boundaries or ponded areas depending on location of potentially inundated areas (as determined during the focused surveys for fairy shrimp).
4. A pre-construction survey for burrowing owl is recommended within 14-days prior to the initiation of ground disturbing activities and any subsequent break in construction activities that extends beyond 14-days. The surveys should cover the project boundary and a 500-foot buffer. If burrowing owl are determined present within the project boundary, then a burrowing owl management plan should be prepared and implemented prior to construction initiation. If construction is anticipated to begin during the nesting season (February 1 through August 31) and burrowing owl is determined to be present onsite or within 500-feet of the project boundary, the burrowing owl management plan should be submitted to CDFW for approval and implemented prior to construction initiation.
5. All trenches, holes, or pits should be covered completely (by wooden boards, etc.) at the end of each workday. Prior to starting work each day, or continuing work after a prolonged break, all trenches, holes, or pits should be inspected for any trapped wildlife. If any wildlife becomes

trapped, it must be safely removed or provided a method of egress and allowed to leave prior to continuing any further construction activity.

6. Focused surveys for Crotch bumble bee are recommended during the Crotch's bumble bee active period (March to July). The survey will be a visual survey conducted by a qualified Biologist (i.e., one with experience in the identification of bee species). The Biologist will search for Crotch's bumble bee activity and the presence of ground nests. If a ground nest is observed, it will be protected in place until it is no longer active as determined by a Biologist.

7. A focused habitat assessment by a biologist permitted to trap for small mammals is recommended. If potentially suitable habitat for state or federally listed small mammal species is determined to be present in the project boundary, then additional surveys will likely be necessary (e.g. trapping) to determine species present. If listed mammals are present, then consultation with the resource agencies and/or compensatory mitigation may be required.

8. To avoid impacts on nesting birds and raptors, initiation of construction should be scheduled between September 1 and January 31, which is outside the peak nesting season. If construction and/or vegetation removal must occur during the peak nesting season (i.e., February 1 to August 31), a pre-construction nesting bird survey should be conducted by a qualified Biologist within 14 days prior to vegetation removal activities.

   If the Biologist finds an active nest within or adjacent to the construction area, the Biologist will identify an appropriate protective buffer zone around the nest depending on the sensitivity of the species, the nature of the construction activity, and the amount of existing disturbance in the vicinity. In general, the Biologist should designate a buffer of 50 to 200 feet for common nesting birds and 200 to 500 feet for special status nesting birds and nesting raptors. No construction activities will be allowed within the buffer until nesting activity has ended to ensure compliance with *California Fish and Game Code.*

9. Standard construction best management practices (BMPs) should be implemented to prevent toxins, chemicals, or petroleum products from entering the San Jacinto River and degrading water quality. In addition, BMPs are recommended to minimize erosion.

10. Depending on the findings of the recommended surveys, EMWD may choose to go through the PSE process in lieu of the lengthier process for project-by-project incidental take authorization. Requirements are similar to those undertaken during Joint Project Review, including reserve assembly requirements, all biological survey requirements (Sections 6.1.2, 6.1.3, 6.1.4, and 6.3.2 of the MSHCP), and preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) document, if needed. The PSE process would involve submittal of a PSE application package, which includes the PSE application form, shapefiles of the project boundary and any conservation/mitigation areas, a biological report with consistency analysis chapter, supporting biological survey reports, and a DBESP, if needed.

If you have any questions or comments, please contact Steve Norton at (714) 751-7373.

Sincerely,

PSOMAS

Steve Norton
Senior Project Manager

Enclosures: Exhibits 1–5
Attachment A – Literature Review Results

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Aerial Source: Esri, Maxar 2019

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Project Location

Exhibit 1

Dunlap Recycled Water Pipeline Project

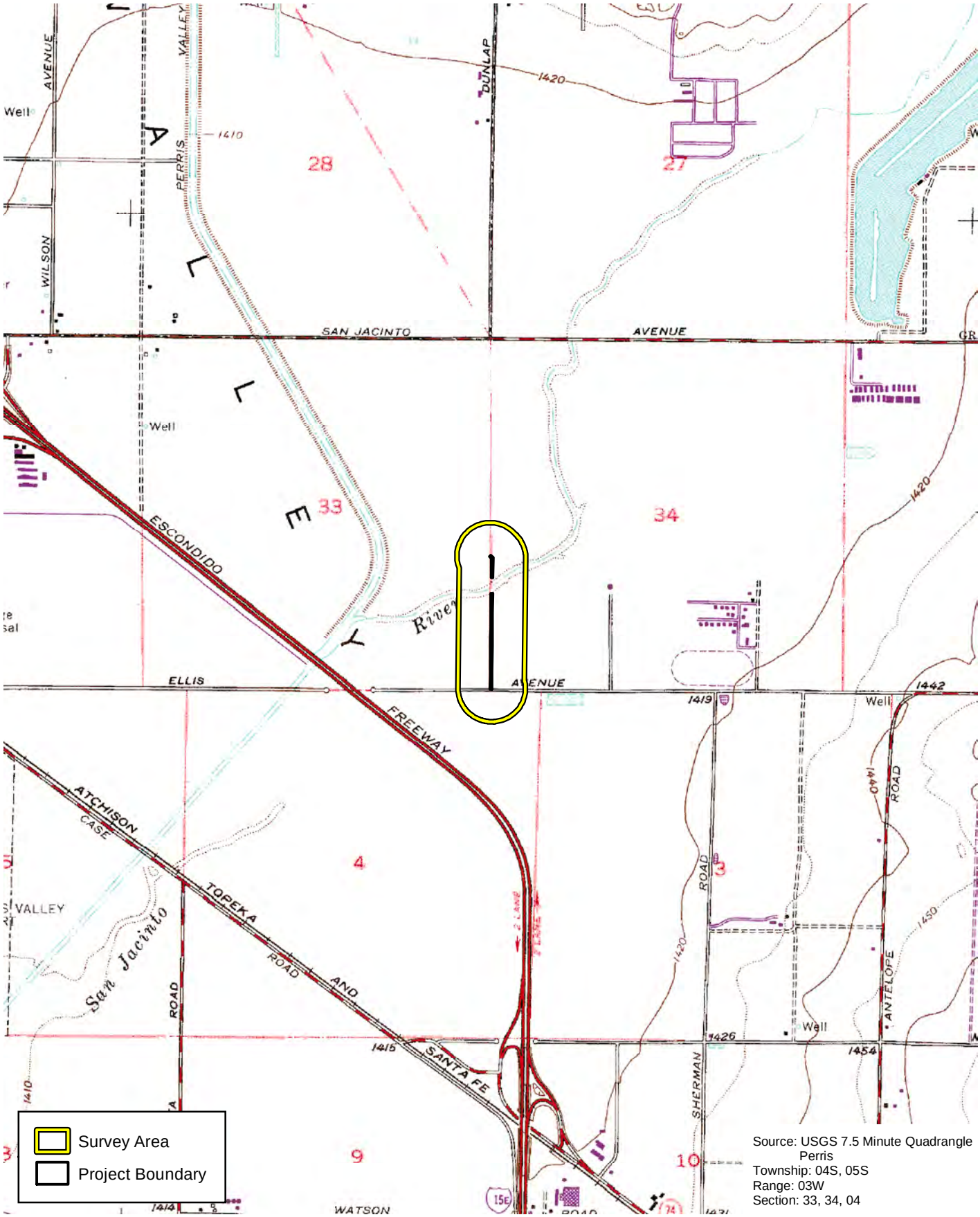
N W E S

700 350 0 700

Feet

PSOMAS

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USGS 7.5-Minute Digital Quadrangle

Exhibit 2

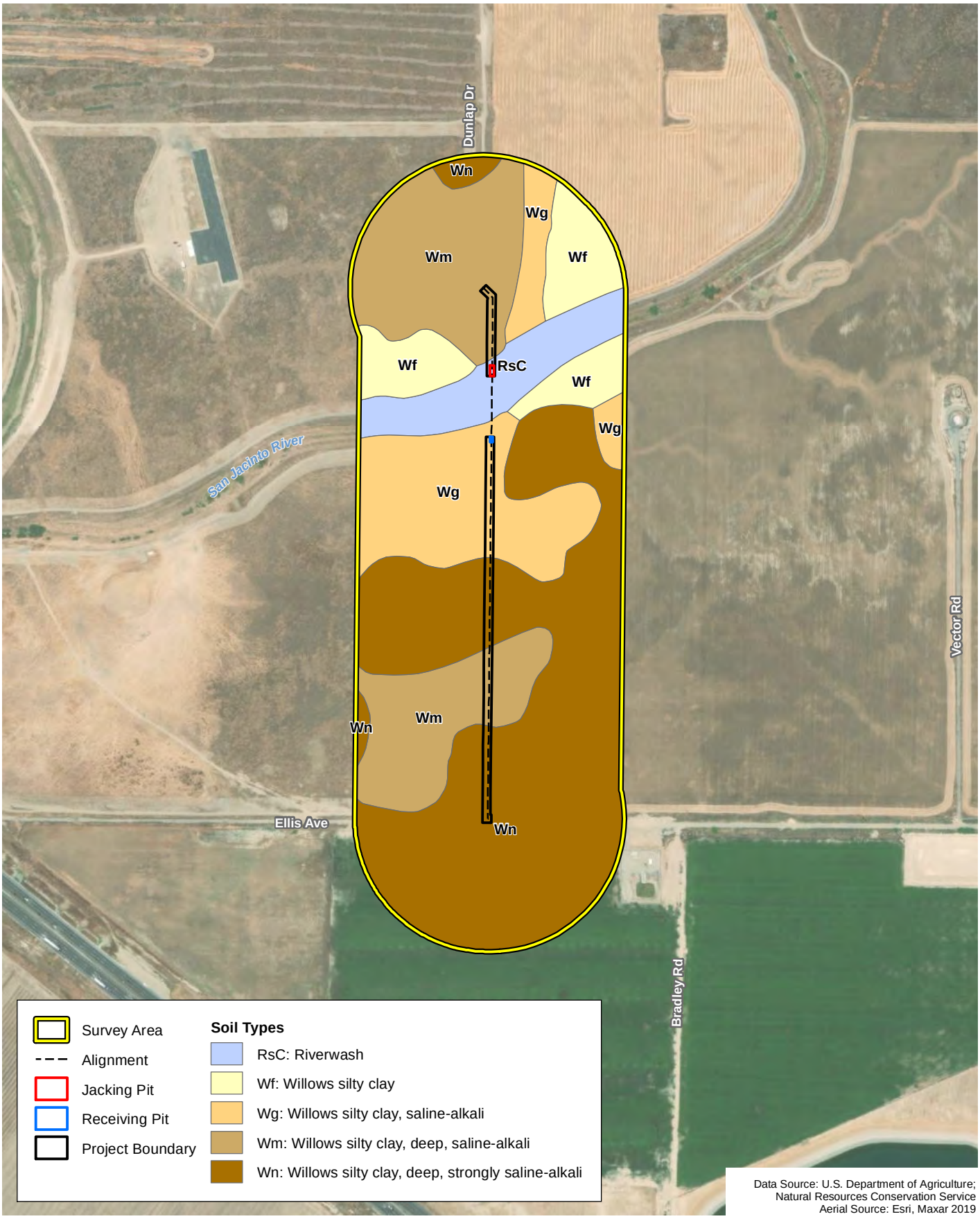
Dunlap Recycled Water Pipeline Project

N W E S

2,000 1,000 0 2,000 Feet

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Data Source: U.S. Department of Agriculture; Natural Resources Conservation Service
Aerial Source: Esri, Maxar 2019

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Soil Types

Exhibit 3

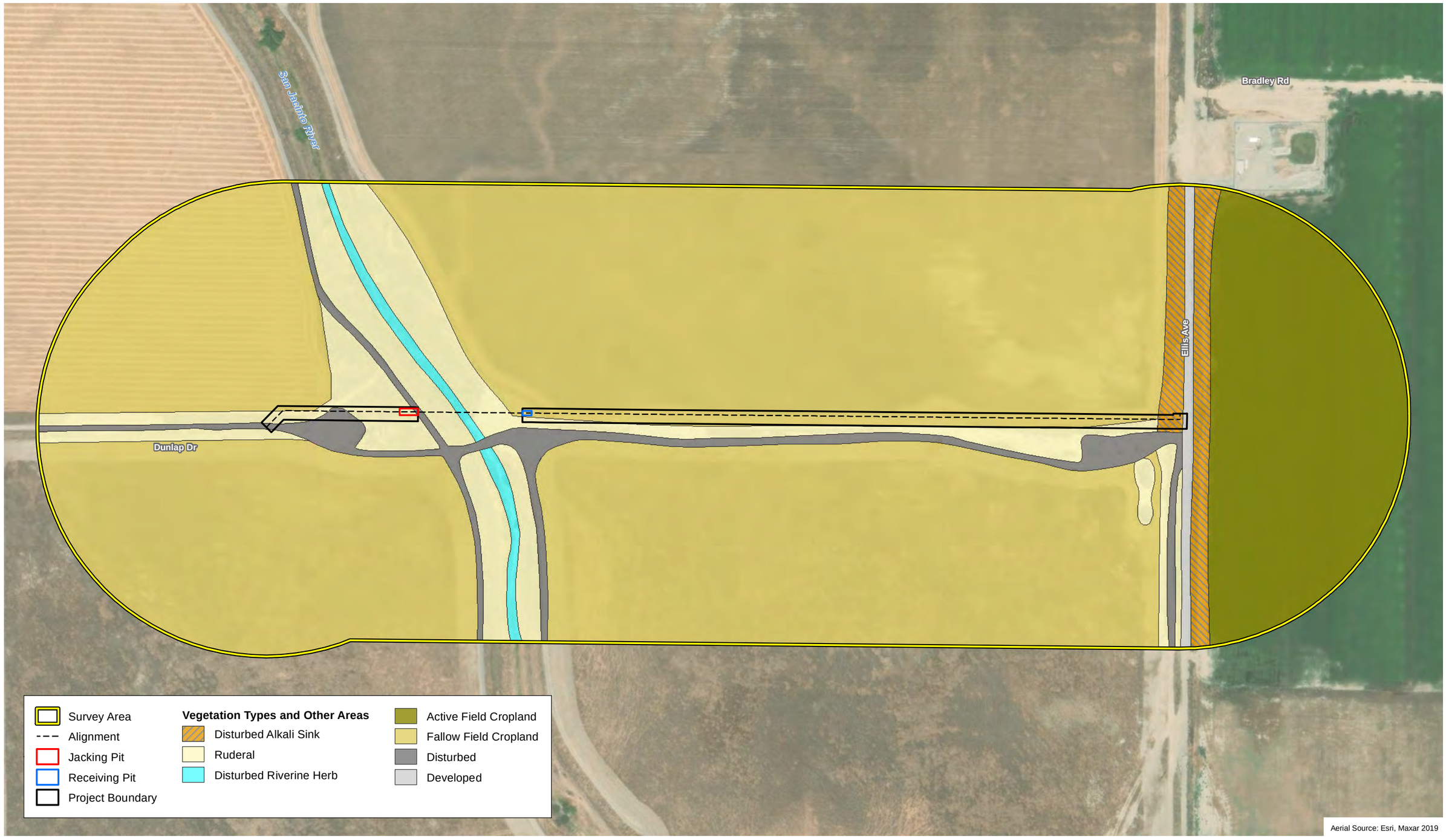
Dunlap Recycled Water Pipeline Project

N W E S

500 250 0 500 Feet

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Vegetation Types and Other Areas

Exhibit 4

Dunlap Recycled Water Pipeline Project

N E S W

200 100 0 200

Feet

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Locations with Evidence of Previous Pooling

Exhibit 5

Dunlap Recycled Water Pipeline Project

N E S W

140 70 0 140

Feet

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ATTACHMENT A

LITERATURE REVIEW RESULTS

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Lake Elsinore (3311763) OR Perris (3311772) OR Romoland (3311762) OR Steele Peak (3311773))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Abronia villosa var. aurita chaparral sand-verbena	G5T2? S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	1,600 1,600	98 S:1	0	1	0	0	0	0	0	1	1	0	0
Accipiter cooperii Cooper's hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	1,640 2,000	118 S:2	0	0	1	0	0	1	2	0	2	0	0
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	1,420 1,420	955 S:1	0	0	0	0	0	1	0	1	1	0	0
Aimophila ruficeps canescens southern California rufous-crowned sparrow	G5T3 S3	None None	CDFW_WL-Watch List	1,400 2,245	235 S:18	1	6	1	0	0	10	12	6	18	0	0
Allium munzii Munz's onion	G1 S1	Endangered Threatened	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,275 2,223	21 S:10	1	3	1	0	1	4	4	6	9	1	0
Ambrosia pumila San Diego ambrosia	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,270 1,900	59 S:3	0	1	1	0	0	1	0	3	3	0	0
Anniella stebbinsi Southern California legless lizard	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,531 2,247	417 S:11	0	8	3	0	0	0	2	9	11	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Aquila chrysaetos golden eagle	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	1,580 1,580	323 S:1	0	0	0	0	0	1	1	0	1	0	0
Arizona elegans occidentalis California glossy snake	G5T2 S2	None None	CDFW_SSC-Species of Special Concern	1,369 1,642	260 S:10	0	0	0	0	0	10	7	3	10	0	0
Artemisiospiza belli belli Bell's sage sparrow	G5T2T3 S3	None None	CDFW_WL-Watch List USFWS_BCC-Birds of Conservation Concern	1,400 1,900	61 S:9	0	0	0	0	0	9	7	2	9	0	0
Asio otus long-eared owl	G5 S3?	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	2,015 2,030	48 S:2	0	0	0	0	0	2	2	0	2	0	0
Aspidoscelis hyperythra orange-throated whiptail	G5 S2S3	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFS_S-Sensitive	1,280 2,200	369 S:34	1	4	5	1	0	23	27	7	34	0	0
Aspidoscelis tigris stejnegeri coastal whiptail	G5T5 S3	None None	CDFW_SSC-Species of Special Concern	1,500 1,900	148 S:2	0	0	0	0	0	2	1	1	2	0	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	1,275 2,190	1989 S:42	3	8	7	3	1	20	8	34	41	1	0
Atriplex coronata var. notatior San Jacinto Valley crownscale	G4T1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	130 1,415	16 S:5	0	4	0	0	0	1	1	4	5	0	0
Atriplex parishii Parish's brittlescale	G1G2 S1	None None	Rare Plant Rank - 1B.1 SB_CRES-San Diego Zoo CRES Native Gene Seed Bank USFS_S-Sensitive	1,420 1,420	15 S:2	0	0	0	0	1	1	2	0	1	1	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Atriplex serenana var. davidsonii Davidson's saltscale	G5T1 S1	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,420 1,420	27 S:2	0	1	0	0	0	1	2	0	2	0	0
Bombus crotchii Crotch bumble bee	G3G4 S1S2	None Candidate Endangered		1,500 2,200	288 S:7	0	0	0	0	0	7	6	1	7	0	0
Brodiaea filifolia thread-leaved brodiaea	G2 S2	Threatened Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,400 1,420	136 S:6	0	1	3	1	1	0	2	4	5	1	0
Buteo regalis ferruginous hawk	G4 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	1,440 1,500	107 S:2	0	2	0	0	0	0	0	2	2	0	0
Caulanthus simulans Payson's jewelflower	G4 S4	None None	Rare Plant Rank - 4.2 USFS_S-Sensitive	2,300 2,300	31 S:1	0	0	0	0	0	1	1	0	1	0	0
Centromadia pungens ssp. laevis smooth tarplant	G3G4T2 S2	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,250 2,000	126 S:33	0	3	8	3	1	18	12	21	32	1	0
Chaetodipus californicus femoralis Dulzura pocket mouse	G5T3 S3	None None	CDFW_SSC-Species of Special Concern	1,480 1,480	54 S:1	0	0	0	1	0	0	1	0	1	0	0
Chaetodipus fallax fallax northwestern San Diego pocket mouse	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	1,320 2,160	101 S:8	0	2	2	0	0	4	7	1	8	0	0
Charadrius alexandrinus nivosus western snowy plover	G3T3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	1,240 1,240	138 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Chorizanthe parryi var. parryi Parry's spineflower	G3T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	1,300 2,280	150 S:23	0	1	1	0	3	18	5	18	20	0	3
Chorizanthe polygonoides var. longispina long-spined spineflower	G5T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,270 2,200	166 S:21	2	6	1	0	0	12	3	18	21	0	0
Cicindela senilis frosti senile tiger beetle	G2G3T1T3 S1	None None		1,350 1,350	9 S:1	0	0	0	0	0	1	1	0	1	0	0
Crotalus ruber red-diamond rattlesnake	G4 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,320 2,335	192 S:25	0	1	2	0	0	22	9	16	25	0	0
Diadophis punctatus modestus San Bernardino ringneck snake	G5T2T3 S2?	None None	USFS_S-Sensitive	1,600 1,600	14 S:1	0	0	0	0	0	1	1	0	1	0	0
Dipodomys merriami parvus San Bernardino kangaroo rat	G5T1 S1	Endangered Candidate Endangered	CDFW_SSC-Species of Special Concern	1,400 1,756	81 S:3	0	0	0	0	1	2	3	0	2	1	0
Dipodomys stephensi Stephens' kangaroo rat	G2 S2	Endangered Threatened	IUCN_EN-Endangered	1,280 2,250	220 S:70	4	9	25	13	6	13	66	4	64	0	6
Dodecahema leptoceras slender-horned spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		41 S:1	0	0	0	0	1	0	1	0	0	0	1
Dudleya multicaulis many-stemmed dudleya	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	1,600 1,600	154 S:1	0	0	0	0	0	1	0	1	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	1,258 2,000	180 S:2	1	0	0	0	0	1	1	1	2	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	1,450 1,450	1398 S:1	0	0	0	0	1	0	1	0	0	1	0
Eremophila alpestris actia California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	1,410 1,700	94 S:9	1	1	2	0	0	5	5	4	9	0	0
Eumops perotis californicus western mastiff bat	G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority	1,500 1,570	296 S:4	0	0	0	0	0	4	3	1	4	0	0
Euphydryas editha quino quino checkerspot butterfly	G5T1T2 S1S2	Endangered None		1,500 2,200	127 S:5	1	0	0	0	1	3	4	1	4	1	0
Haliaeetus leucocephalus bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	1,400 1,400	329 S:1	0	0	0	0	0	1	1	0	1	0	0
Harpagonella palmeri Palmer's grapplinghook	G4 S3	None None	Rare Plant Rank - 4.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,540 2,100	57 S:4	1	0	0	0	1	2	4	0	3	1	0
Icteria virens yellow-breasted chat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,510 1,510	100 S:1	0	1	0	0	0	0	0	1	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Lanius ludovicianus loggerhead shrike	G4 S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	1,408 1,455	110 S:2	0	0	1	1	0	0	0	2	2	0	0
Lasiurus xanthinus western yellow bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	1,425 1,660	58 S:2	0	0	0	0	0	2	2	0	2	0	0
Lasthenia glabrata ssp. coulteri Coulter's goldfields	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	1,250 1,440	111 S:12	4	1	0	1	0	6	3	9	12	0	0
Lepidium virginicum var. robinsonii Robinson's pepper-grass	G5T3 S3	None None	Rare Plant Rank - 4.3	1,550 2,000	142 S:2	0	0	1	0	0	1	1	1	2	0	0
Lepus californicus bennettii San Diego black-tailed jackrabbit	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	1,300 1,900	103 S:11	0	3	2	0	0	6	4	7	11	0	0
Myosurus minimus ssp. apus little mousetail	G5T2Q S2	None None	Rare Plant Rank - 3.1 SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	2,000 2,000	24 S:1	0	0	0	0	0	1	1	0	1	0	0
Navarretia fossalis spreading navarretia	G2 S2	Threatened None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,400 1,500	78 S:12	1	5	2	0	0	4	3	9	12	0	0
Neolarra alba white cuckoo bee	GH SH	None None		1,700 1,700	8 S:1	0	0	0	0	0	1	1	0	1	0	0
Neotoma lepida intermedia San Diego desert woodrat	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	1,500 1,500	132 S:1	0	1	0	0	0	0	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Nyctinomops femorosaccus pocketed free-tailed bat	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_M-Medium Priority	1,600 1,600	90 S:1	0	0	0	0	0	1	1	0	1	0	0
Onychomys torridus ramona southern grasshopper mouse	G5T3 S3	None None	CDFW_SSC-Species of Special Concern	1,450 1,500	28 S:2	0	0	0	0	0	2	2	0	2	0	0
Orcuttia californica California Orcutt grass	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,300 1,485	37 S:4	0	2	0	0	1	1	2	2	3	1	0
Perognathus longimembris brevinasus Los Angeles pocket mouse	G5T1T2 S1S2	None None	CDFW_SSC-Species of Special Concern	1,478 1,600	70 S:4	0	1	2	1	0	0	2	2	4	0	0
Phrynosoma blainvillii coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,320 2,600	784 S:22	1	3	2	1	2	13	16	6	20	1	1
Plegadis chihi white-faced ibis	G5 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	1,240 1,240	20 S:1	0	0	0	0	1	0	1	0	0	1	0
Polioptila californica californica coastal California gnatcatcher	G4G5T2Q S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_YWL-Yellow Watch List	1,360 2,200	883 S:50	1	6	4	0	1	38	34	16	49	1	0
Salvadora hexalepis virgultea coast patch-nosed snake	G5T4 S2S3	None None	CDFW_SSC-Species of Special Concern	1,600 1,600	34 S:1	0	0	1	0	0	0	0	1	1	0	0
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	G4 S4	None None		1,580 1,880	246 S:6	0	0	0	0	2	4	6	0	4	0	2
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	G3 S3.2	None None		1,260 1,840	111 S:7	0	0	0	0	2	5	7	0	5	0	2

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	G4 S4	None None		1,320 2,820	230 S:7	0	0	0	0	0	7	7	0	7	0	0
Spea hammondii western spadefoot	G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	1,248 2,283	1409 S:30	0	6	3	6	1	14	8	22	29	1	0
Streptocephalus woottoni Riverside fairy shrimp	G1G2 S1S2	Endangered None	IUCN_EN-Endangered	1,260 1,510	83 S:4	0	1	0	2	1	0	0	4	3	0	1
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,440 1,440	594 S:1	0	0	0	0	0	1	1	0	1	0	0
Texosporium sancti-jacobi woven-spored lichen	G3 S2	None None	Rare Plant Rank - 3	2,320 2,320	19 S:1	0	0	0	0	0	1	0	1	1	0	0
Trichocoronis wrightii var. wrightii Wright's trichocoronis	G4T3 S1	None None	Rare Plant Rank - 2B.1	1,420 1,429	12 S:3	0	1	0	0	0	2	2	1	3	0	0
Vireo bellii pusillus least Bell's vireo	G5T2 S2	Endangered Endangered	IUCN_NT-Near Threatened NABCI_YWL-Yellow Watch List	1,250 1,700	503 S:19	1	6	5	1	0	6	1	18	19	0	0

Appendix C

Phase I Archaeological and Paleontological Resources Inventory

Phase I Archaeological and Paleontological Resources Inventory

Dunlap Drive Recycled Water Pipeline Replacement Project, Riverside, California

Prepared for

Eastern Municipal Water District
2270 Trumble Road
Perris, California 92572

Prepared by

Psomas
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July 2021

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ATTACHMENTS

Attachment	
A	EIC Cultural Resources Records Search Results
B	Native American Heritage Commission Search Results
C	Western Science Center Paleontology Records Search Results

ACRONYMS LIST

AB	Assembly Bill
ARMR	Archaeological Resource Management Report
ARPA	Archaeological Resources Protection Act
ca.	circa
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information Center
CMLC	cement-mortar lined and coated
CRHR	California Register of Historic Resources
District	Eastern Municipal Water District
EIC	Eastern Information Center
GPS	global positioning system
I	Interstate
lf	linear feet
NADB	National Archaeological Database
NAGPRA	Native American Graves Protection & Repatriation Act
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
PRC	California Public Resources Code
PTC	Positive Train Control
PVRWRF	Perris Valley Regional Water Reclamation Facility
ROW	right-of-way
RPA	Registered Professional Archaeologist
SLF	Sacred Lands File
SVP	Society for Vertebrate Paleontology
USC	United States Code
USGS	United States Geological Survey
WSC	Western Science Center

NATIONAL ARCHAEOLOGICAL DATABASE (NADB)

INFORMATION SHEET

Phase I Archaeological and Paleontological Resources Inventory for the Dunlap Drive Recycled Water Pipeline Replacement Project,

Riverside County, California

BY

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July 2021

Submitted by:

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Submitted to:

Eastern Municipal Water District
2270 Trumble Road
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Prepared for: CEQA Documentation
USGS Geologic Map Perris 7.5-Minute Quadrangles

Psomas Project Number: 3EAS020103
Key Words: Archaeological Survey, Dunlap Drive, Riverside County

EXECUTIVE/MANAGEMENT SUMMARY

PURPOSE AND SCOPE

The purpose of this Phase I Archaeological and Paleontological Resource Inventory (report) study is to determine the potential for impacts to archaeological and paleontological resources within the proposed Eastern Municipal Water District's (District) Dunlap Drive Recycled Water Pipeline Replacement Project (hereinafter referred to as the "Project"), located in Riverside County, California.

Psomas' study consisted of an Eastern Information Center records and literature search, a Sacred Lands File (SLF) search from the Native American Heritage Commission (NAHC), a Western Science Center (WSC) paleontological records search, and an archaeological and paleontological field survey of the proposed Project alignment. This report documents the results of this study.

DATES OF INVESTIGATION

Psomas requested the cultural resources literature and records search for the Project from the EIC on September 29, 2020. The EIC completed its search on April 19, 2021. On October 9, 2020, Psomas requested that the NAHC conduct a search of its Sacred Lands File to determine if cultural resources important to Native Americans have been recorded within the Project site or in the immediate vicinity of the Project site. The NAHC completed its search on October 12, 2020. Additionally, Psomas requested a paleontological resource record search from the WSC on May 4, 2021. The WSC completed its search on May 19, 2021.

A pedestrian survey of the Project site was conducted on June 8, 2021. This study was completed in July 2021 and is based on the findings from the records and literature searches and the field survey of the proposed Project alignment.

FINDINGS OF THE INVESTIGATION

The results of the 2021 EIC cultural resources records searches identified 13 previously recorded cultural resources within 1.6 kilometer (1 mile) of the Project site. The previously recorded resources include three historic sites, three prehistoric sites, one historic isolated artifact, and six isolated prehistoric artifacts. The historic sites and isolated finds consist of historic refuse (trash) and a segment of the California Southern Railway. The prehistoric sites and isolated finds include the remnants of prehistoric lithic scatters consisting of debitage (flaked stone left behind from tool manufacturing), stone tools (choppers and scrapers), and ground stone fragments (metates and pestles). None of the 13 archaeological sites and/or isolated discoveries are located within the proposed Project alignment. Furthermore, the NAHC Sacred Lands File search was negative for sacred sites. Additionally, the WSC paleontological resource records search was negative for paleontological resources (i.e. fossils).

The 2021 field survey (archaeological and paleontological) identified one isolated historic archaeological feature (ISO-01) consisting of the remains of a post and barbed wire fence. However, it should be noted that ISO-01 is not eligible for the California Register of Historic Resources (CRHR) due to its limited data potential and lack of archaeological association. And while the study of agricultural features, such as wood posts and barbed wire often provide insight into how the landscape was used by early-settlers, these types of cultural resources are neither unique nor unusual for this region of California; therefore they are ineligible for the CRHR. No prehistoric archaeological resources were identified within the proposed Project alignment. Additionally, no paleontological resources were identified within the Project site.

DISPOSITION OF DATA

This report will be filed with the Psomas, EIC, and the WSC. All field notes and other documentation related to the report are on file at Psomas.

1.0 INTRODUCTION

1.1 PROJECT LOCATION

The Project is located along Dunlap Drive from Ellis Avenue (between Vector Road to the east and Interstate [I] 215 underpass) in the south, past the future Santa Rosa Road, and ending approximately 400 feet north of the San Jacinto River. More specifically, the Project site is located on the Perris 7.5-minute United States Geological Survey (USGS) topographic quadrangle within Township 4 South, Range 3 West, and Sections 4, 33, and 34 of the San Bernardino Base and Meridian (Exhibit 1).

1.2 PROJECT DESCRIPTION

The Project includes installation of approximately 2,000 linear feet (lf) of 36- to 48-inch pipeline, extending along Dunlap Drive from Ellis Avenue (between Vector Road to the east and I-215 underpass) in the south, past the future Santa Rosa Road, and ending north of the San Jacinto River crossing for approximately 400 feet (Exhibit 2). The purpose of the proposed Project is the construction of a replacement pipeline and all associated connections to continue to convey recycled water from the District's Perris Valley Regional Water Reclamation Facility to the North Trumble Road Recycled Water Storage Pond located near San Jacinto Avenue and Pico Avenue. The 2,000 lf proposed 36- to 42-inch-diameter cement-mortar lined and coated steel pipeline replacement will be located within the Dunlap Road alignment right-of-way. Once the new pipeline replacement is constructed and operational, the proposed Project alignment would continue recycled water conveyance for the 3.8-mile Dunlap Road Pipeline.

1.3 PROJECT PERSONNEL

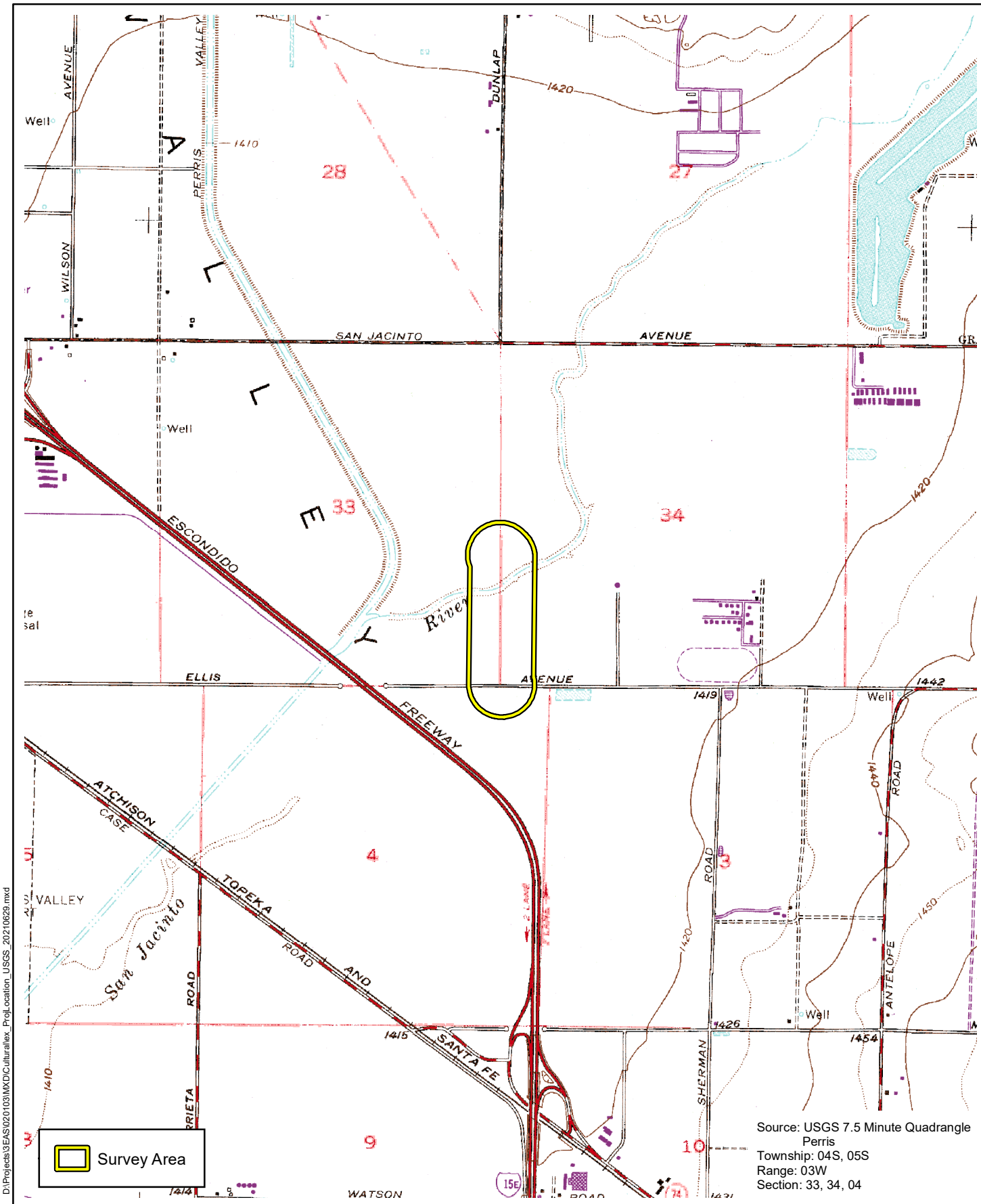
The staff members for the proposed Project were selected based on their familiarity with the site's geographic location and understanding of the archaeology and paleontology discipline. The team includes experts with extensive experience in California archaeology and prehistory, paleontology, cultural resources management, project administration, and other appropriate skills including spatial analysis. Key personnel are Registered Professional Archaeologists (RPA) who meet or exceed the Secretary of the Interior's Professional Qualification Standards (NPS 1994) for archaeology and the Society for Vertebrate Paleontology (SVP). Project roles and responsibilities are summarized below.

1.3.1 Charles Cisneros, M.S., RPA

Charles Cisneros is a Registered Professional Archaeologist and served as the Project's Principal Investigator. Mr. Cisneros supervised all aspects of the archaeological Project, including the field survey and the preparation of this report.

1.3.2 Marissa De Hoyos, M.S.

Marissa Del Hoya was responsible for contributing to the geological and paleontological history section of this report.



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Project Location Map (Topographic)

Exhibit 1

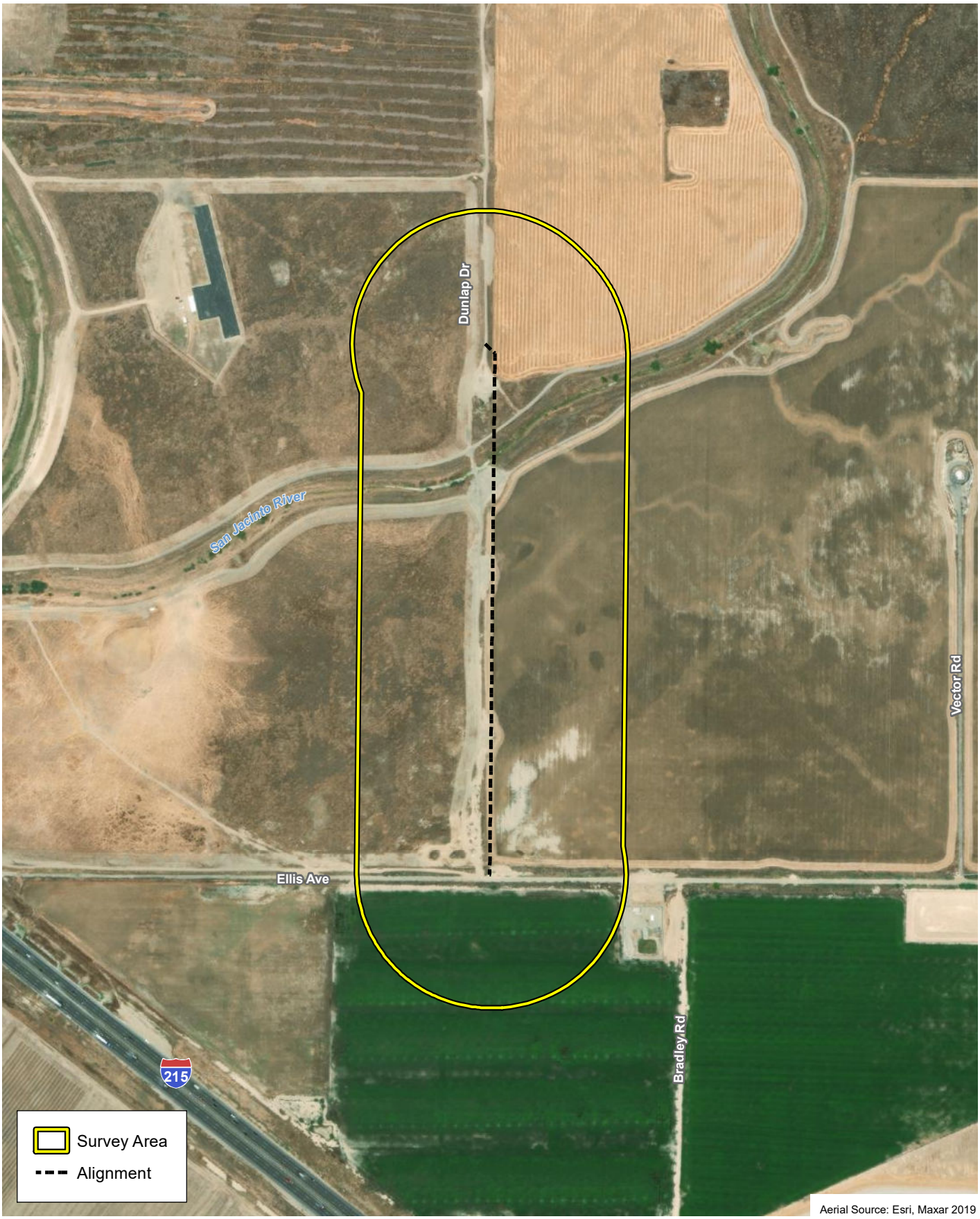
Dunlap Recycled Water Pipeline Project

N
W
E
S

2,000 1,000 0 2,000 Feet

PSOMAS

(Rev: 06/29/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\Cultural\ex_ProjLocation_USGS.pdf



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Project Location Map (Aerial)

Exhibit 2

Dunlap Recycled Water Pipeline Project

N W E S

500 250 0 500 Feet

PSOMAS

(Rev: 06/29/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\Cultural\ex_ProjLocation_Aerial.pdf

2.0 REGULATORY SETTING

2.1 CULTURAL RESOURCES

Cultural resource laws, regulations, and guidelines set up the processes for defining what is or is not a significant cultural resource and include various agency procedures for managing these archaeological and historical resources and assessing the information from the cultural remains to determine their significance. Most importantly is whether these resources are eligible for inclusion in a national or state register (i.e., the National Register of Historic Places [NRHP] and CRHR). As defined by archaeologists Thomas Neumann and Robert Sanford (2001: 27), the laws and regulations serve to do the following:

- Set forth the criteria for assessing the relative importance of cultural remains;
- Outline the procedures for reviewing assessments;
- Delineate the responsible parties involved in making such assessments;
- Identify and then define the extent of jurisdiction and responsibility of each party in the evaluation process;
- Set forth the criteria for making a determination of significance, as well as indicating which party can or cannot make such determinations;
- Set forth the criteria for the archaeological and historic preservation work performed; and
- Set forth the criteria regarding who can perform the archaeological and historic preservation work.

A summary of State laws, regulations, and standards that govern cultural resource management within the Project's alignment is provided below.

2.1.1 State Regulatory Setting

California Register of Historical Resources

The California Environmental Quality Act (CEQA) requires a lead agency to determine whether a project would have a significant effect on one or more historical resources. According to Section 15064.5(a) of the State CEQA Guidelines, a "historical resource" is defined as a resource listed in or determined to be eligible for listing in the CRHR (*California Public Resources Code* [PRC] Section 21084.1); a resource included in a local register of historical resources (*California Code of Regulations* [CCR], Title 14, Section 15064.5[a][2]); or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (14 CCR 15064.5[a][3]).

Section 5024.1 of the PRC, Section 15064.5 of the State CEQA Guidelines (CCR, Title 14, Chapter 3, Sections 15000–15387), and Sections 21083.2 and 21084.1 of the CEQA (PRC, Sections 21000–21189) were used as the basic guidelines for the cultural resources study. PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the CRHR is to maintain listings of the State's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR, which were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP (per the criteria listed at 36 *Code of Federal Regulations* [CFR] 60.4), are stated below.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

(1) Are associated with events that have made a significant contribution to the broad patterns of our history; or

(2) Are associated with the lives of persons significant in our past; or

(3) Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(4) Have yielded, or may be likely to yield, information important in prehistory or history.

According to Section 15064.5(a)(3) (A–D) of the State CEQA Guidelines, a resource is considered historically significant if it meets the criteria for listing in the NRHP, as stated above, in addition to the CRHR. Impacts that affect those characteristics of the resource, that qualify it for the NRHP or that would adversely alter the significance of a resource listed in or eligible for listing in the CRHR, are considered to have a significant effect on the environment. Impacts to cultural resources from the proposed Project are thus considered significant if the Project: (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource that contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

The purpose of a cultural resources' investigation is to evaluate whether any cultural resources remain exposed on the surface of a project site or can reasonably be expected to exist in the subsurface. If resources are discovered, management recommendations would be required for evaluation of the resources for CRHR eligibility.

Assembly Bill 52

Assembly Bill (AB) 52 (Chapter 532, Statutes of 2014), which became effective on July 1, 2015, requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project, if they have requested such notice in writing. Once Native American tribes receive a project notification, they have 30 days to respond and identify if they wish to initiate consultation regarding the project, including subjects such as mitigation for any potential project impacts to tribal cultural resources. A tribal cultural resource is defined as either a site, feature, place, or cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is eligible for the CRHR or a local historic register. If a tribe requests consultation and the lead agency and the tribe ultimately agree on mitigation to address any potentially significant impacts to tribal cultural resources, the mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document.

2.1.2 Human Remains

Section 7050.5 of the *California Health and Safety Code* provides for the disposition of accidentally discovered human remains. Section 7050.5 states that, if human remains are found, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains would occur until the County Coroner has determined the appropriate treatment and disposition of the human remains.

Section 5097.98 of the PRC states that, if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the NAHC within 24 hours. The NAHC, in turn, must identify the person or persons it believes to be the most likely descendant of the deceased Native American. The descendant shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

2.2 PALEONTOLOGICAL RESOURCES

Paleontological resources are afforded protection by environmental legislation set forth under CEQA. Appendix G of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, indicating that a project will have a significant impact on paleontological resources if it will disturb or destroy a unique paleontological resource or site or unique geological feature.

Under Guidelines for the Implementation of CEQA, as amended March 29, 1999 (Title 14, Division 6, Chapter 3, California Code of Regulations: 15000 et seq.), procedures define types of activities, persons, and public agencies required to comply with CEQA and include as one of the questions to be answered in the Environmental Checklist: “Will the proposed project disturb paleontological resources?” (Appendix G, Section VII, Part f)

The California Public Resources Code Section 5097.5 states:

a) “No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

b) As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.”

3.0 SETTING

3.1 CONTEMPORARY SETTING

The 2,000 lf pipeline alignment would be located generally parallel to an existing pipeline and within the District's existing 30-foot-wide easement along Dunlap Drive (Figure 1). As noted above, the pipeline replacement would extend from Ellis Avenue south of the Project, running past the future Santa Rosa Road and San Jacinto River crossing to approximately 400 feet north of the river crossing. The Project alignment is in an area previously used for agriculture (Figure 2). Nearby surrounding land uses mainly include farmland and undeveloped disturbed land. In addition, the Riverside Radio Control Club Flying Field is located approximately 0.18 miles northwest of the Project alignment. Finally, urban development exists with residential uses located 0.65 miles east and 0.50 south of the Project alignment. Modern refuse is also scattered along the proposed Project alignment (Figure 3).



FIGURE 1: DUNLAP DRIVE (VIEW LOOKING SOUTH)



FIGURE 2: AGRICULTURAL DISTURBANCE (VIEW LOOKING SOUTHWEST)



FIGURE 3: MODERN REFUSE (VIEW LOOKING SOUTHEAST)

3.2 GEOLOGICAL SETTING

The proposed Project alignment lies within the Perris Block of the Peninsular Range Geomorphic Province. The Peninsular Range is known as one of the largest mass of granitic rock in Southern California bounded by the San Jacinto Fault Zone and San Jacinto Mountains to the northeast, the Elsinore Fault Zone and Santa Ana Mountains to the southwest, and the San Gabriel Fault Zone to the North. The Menifee, Moreno, Perris and San Jacinto Valleys are separated by granitic mountain outcrops of the Peninsular Range. The valley floor is composed of late Pleistocene-recent Holocene plutonic and metamorphic sediments eroded by the local granitic mountains of the Perris Block.

The Perris Block lies between two other blocks that are locked in place by faulting. To the west of the Perris Block lies the Santa Ana Block and to the east lies the San Jacinto Block. Internally unfaulted itself, the Perris Block is composed of an eroded mass of Cretaceous granitic rock of the Southern California Batholith. Overlying this granite are alluvial sediments of the Pliocene-Pleistocene. This layer is mostly 20ft-200ft in thickness with some areas being 2000ft thick. Granitic bedrock consists of quartz diorite and displays outcrops which include large boulders on the surface. The granitic outcrops of the Perris Block are part of a felsic intrusive igneous pluton composed of biotite-hornblende Tonalite known as the Domenigoni Valley Pluton. The pluton is mostly fine grained with some concentrations of foliated hornblende dikes.

The northern part of the Perris Block is located north of the Santa Ana River which is buried beneath sediments of the Transverse Ranges as they rose over the last 2-3 million years. These sediments form the Inland Santa Ana River Basin Aquifer. The aquifer spreads into the Central Perris Plain where it drains into the San Jacinto Basin. North of the basin, the plain is drained by Sycamore Canyon and Tequesquito Arroyo into the Santa Ana River. The sediments within the Perris Block are of late Pleistocene- recent Holocene age. They are moderate to well consolidated sands and silts with some of the older Pleistocene alluvium containing areas with conglomerates. These alluvial fan deposits can be seen throughout the valley floors with the younger more recent Holocene aged sediments being found in low lying areas.

3.3 PALEONTOLOGICAL SETTING

Paleontological sensitivity refers to the potential of encountering any significant paleontological resources in a geologic unit that might be disturbed in a project. Geologic units composed of all sedimentary rocks older than 11,000 years, certain extrusive volcanic rocks and mildly metamorphosed rocks are considered to be of high potential for significant paleontological finds. These geological units are of Fossil Deposit Significance. Fossil significance relates to fossils that are identifiable vertebrates large or small, uncommon invertebrates, plant, and trace fossils. In other words, any data that is consistent with the taphonomic, taxonomic, phylogenetic, paleoecological, stratigraphic, and/or have biochronological information would make these finds significant.

Within the Perris Block lies the Young Alluvial Valley Deposits and the Early Pleistocene Very Old Alluvial Fan Deposits where any significant paleontological resources have been found. These Deposits are all Pleistocene in age where any fossil resources have been found below 5ft from the surface. The Young Alluvial Valley Deposits are dated late Pleistocene and into recent Holocene so the sensitivity of paleontological resources in this deposit is low. The deposits below this layer are of Early Pleistocene where sensitivity is high. For example, nearby at Diamond Valley Lake, what is considered to be the largest Late Pleistocene faunal assemblages in the southwest, over 100,000 fossil specimens from 105 plant and animal species from the Early Pleistocene Very Old Alluvial Fan Deposits were recovered in the 1990s.

3.4 PREHISTORIC SETTING

Southern California has a long history of human occupation, with dates of the earliest evidence of human occupation during the late Pleistocene, circa (ca.) 11,000 years B.C. (Glassow et al. 2007: 191). Prehistoric material culture in the State's southern region has been categorized according to periods or patterns that define technological, economic, social, and ideological elements. Within these periods, archaeologists have defined cultural patterns or complexes specific to prehistory within the State's southern region, including the Project area.

The following text and table (Table 1) illustrates the chronological framework developed for Southern California. This framework is divided into four major periods: Paleoindian period (ca. 11,000–7000 B.C.), Milling Stone period (7000 B.C.–3000 B.C.), Intermediate period (3000 B.C.–A.D. 500), and Late Prehistoric period (A.D. 500–Historic Contact). Within these broad temporal periods are variations in the timing and nomenclature of cultural complexes for the region. The timescales referenced in the following discussion are presented as calendar dates (years B.C.–A.D.).

TABLE 1
CULTURAL CHRONOLOGY FOR SOUTHERN CALIFORNIA

Period	Cultural Traits	Years (B.C.–A.D.)
Paleoindian	Clovis and Folsom Fluted Projectile Points	11,000 B.C.–7000 B.C.
Milling Stone	Ground Stone Implements; Large Leaf-Shaped Projectile Points	7000 B.C.–3000 B.C.
Intermediate	Large Side-Notched, Stemmed, and Leaf-Shaped Projectile Points; Mortar and Pestle	3000 B.C.–A.D. 500
Late Prehistoric	Smaller Projectile Points with Convex or Concave Bases, Bow and Arrow; Increased Population Size	A.D. 500–1769

3.4.1 Paleoindian Period (11,000–7000 B.C.)

Recent data from coastal and inland sites during this period indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas and on Pleistocene lakeshores (Moratto 1984:90–92). Although few Clovis-like or Folsom-like fluted points have been found in Southern California, it is widely thought that there was a greater emphasis on hunting at near-coastal and inland sites during the Paleoindian Period than in later periods (e.g., Dillon 2002; Erlandson et al. 1987). Subsistence patterns shifted around 6000 B.C., concurrent with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3,000 years. As the climate changed, a greater emphasis was placed on plant foods and small animals.

3.4.2 Milling Stone Period (7000–3000 B.C.)

The Milling Stone Period (Wallace 1955, 1978) is the earliest well-established period of occupation in Southern California (Glassow et al. 2007: 192). This period is characterized by an ecological adaptation to collecting, accompanied by a dependence on ground stone implements associated with the horizontal motion of grinding small seeds: milling stones (metates, slabs) and hand stones (manos, mullers). Milling stones are found in large numbers for the first time and become more numerous toward the end of this period. As evidenced by their tool kits and shell middens in coastal sites, people during this period practiced a mixed food-procurement strategy. Subsistence patterns became more specialized as groups became better adapted to their regional or local environments. Projectile points from the period are relatively rare, but are large and generally leaf-shaped, and were probably employed with darts or spears thrown with atlatls. Bone

tools, such as awls, and items made from shell, including beads, pendants, and abalone dishes, are also quite uncommon. Evidence of weaving or basketry is present at a few sites. The mortar and pestle, associated with the vertical motion of pounding foods such as acorns, were introduced during the Milling Stone Period but do not become common until the Intermediate Period.

3.4.3 Intermediate Period (3000 B.C.–A.D. 500)

The Intermediate Period is characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. During this period, a pronounced trend toward greater adaptation to regional or local resources can be observed. For example, the remains of fish, land mammals, and marine mammals are increasingly abundant and diverse in sites along the Southern California coast. Chipped stone tools suitable for hunting are more common and both stylistically and technologically varied. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Larger knives, a variety of stone flake scrapers, and drill-like implements are also common during this period. Shell fishhooks become an integral part of the tool kit. Bone tools, including awls, are more numerous than in the preceding period; and the use of asphaltum adhesive becomes more common.

3.4.4 Late Prehistoric Period (A.D. 500–1769)

During the Late Prehistoric Period, use of plant food resources increased in conjunction with land and marine mammal hunting. The variety and complexity of material culture also increased during this period, demonstrated by more diverse classes of artifacts. The recovery of many small, finely-chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow for hunting rather than the atlatl and dart.

During this period, an increase in population size is accompanied by the advent of larger, more permanent villages with greater numbers of inhabitants (Wallace 1955:223). Some coastal and near coastal settlements were occupied by as many as 1,500 people. Many of these larger settlements were permanent villages where at least some people resided year-round. The populations of these villages may have also increased seasonally.

3.5 ETHNOGRAPHIC SETTING

3.5.1 Luiseño

The study area is within the ancestral territory occupied by the Luiseño, named by the Spanish after the Mission San Luis Rey de Francia in the present-day City of Oceanside, where some of their linguistic group frequented. The Luiseño cultural area included southern Riverside County, northern San Diego County, and eastern Orange County; and the area was linguistically comprised of a language of the Shoshonean language family (Kroeber 1925: Plate 57). The contact period ethnicity of the Project area is clear, belonging to the Luiseño culture to which the nearby Indian reservations/communities of Pechanga and Pala attest. Ethnographic literature pertinent to the Luiseño, Cahuilla, and surrounding ethnographic groups is fairly extensive and has been collected since the 1800s (Barrows 1900; Sparkman 1908; Kroeber 1925; White 1963; Bean 1972).

Linguistically, the Luiseño belonged to the Cupan group of the Takic subfamily of the more widespread Uto-Aztecan family. This was earlier called the Southern Californian Shoshonean and includes the languages of the Gabrielino, Serrano, Cahuilla, and Cupeño (Bean and Shipek 1978). Although Kroeber (1925) and Harrington (1933) had distinguished the Luiseño from the Juaneño tribe at the Mission San Juan Capistrano based on linguistic differences, later work by R.C. White (1963) showed both groups to be one ethnic nationality (Bean and Shipek 1978).

Several researchers (Sparkman 1908; Kroeber 1925; White 1963; Bean and Shipek 1978) have attempted to reconstruct past Luiseño lifeways. Based on their work, the following conclusions are suggested. The Luiseño were intensive hunters and gatherers that used both coastal and inland resources. They lived in large sedentary villages that were typically located along valley bottoms, streams, coastal strands, and mountain ranges. These villages were usually in good defensive locations near perennial water sources with every village having access to a number of well-defined and well-defended resource areas that were usually within a day's travel from the village. These resource areas were owned either individually, by a family, or by the village as a whole; and it was only with permission that one could exploit another's territory (Bean and Shipek 1978). Typically, the village contained specialized activity areas that included residence houses, sweathouses, and special ceremonial enclosures (True 1966).

Each village was a politically independent clan triblet of patrilineally related people headed by a hereditary chief whose powers included religious, economic, and warfare duties. The chief was assisted by a council of ritual specialists and shamans whose positions were also hereditary (Sparkman 1908; Bean and Shipek 1978).

3.6 HISTORIC SETTING

Post-contact history for the state of California is generally divided into three periods: the Spanish period (1769 to 1822), Mexican period (1822 to 1848), and American period (1848 to present). Although Spanish, Russian, and British explorers made brief visits from 1529 to 1769, the Spanish period in California began with the establishment of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain marks the beginning of the Mexican period. The signing of the Treaty of Guadalupe Hidalgo in 1848, signifying the end of the Mexican-American War, marks the beginning of the American period, when California became a territory, and two years later in 1850 the seventeenth state of the United States of America.

3.6.1 Spanish Period (1769–1822)

The first significant European settlement of California began during the Mission Period (1769 to 1822) with the founding of the first mission in San Diego and lasted until 1833–1834, when the Mexican secularization laws effectively opened the area to social and economic growth. The establishment of the Mission System had several impacts on the indigenous populations of Southern California, including those in Los Angeles County. The mission system was dismantled after Mexican governors introduced new secularization acts between 1822 and 1833, thus freeing the Native Americans from mission control.

3.6.2 Mexican Period (1822–1848)

After secularization, the dominance of the large land grant ranchos was established. In 1810, the Spanish government granted the first rancho to José Antonio Yorba and his nephew Juan Pablo Peralta. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978). During this period, the entire area was almost constantly involved in political and military revolts. The tense situation ended in 1847, when California gained independence from Mexico during the "Bear Flag" revolt. One year later, the United States gained control of the territory following the conclusion of the Mexican-American War.

3.6.3 American Period (1848–Present)

Although California had been under the control of the United States since 1847, the American Period did not really begin in the Project area until 1851, when the Land Act required rancho dons to confirm the ownership of their lands. Many rancho dons lacked funds and legal documents to

confirm land ownership. In addition to legal problems related to the Land Act and new taxes imposed by the United States, many second-generation dons experienced a disastrous two-year drought. This combination of hardships resulted in many rancho families losing their lands. The railroads attracted a steady influx of Euro-American settlers. The Euro-Americans expanded commercial and land development primarily in farming and dairy endeavors. In the twentieth century, independent businesses began to dominate the economic strategy, much as they do today.

4.0 METHODS

4.1 CULTURAL RESOURCES

4.1.1 Cultural Resource Records Search and Literature Review

Psomas requested a literature and records search from the EIC on September 29, 2020. The EIC is a designated branch of the California Historical Resources Information Center (CHRIS) and houses records regarding archaeological and historic resources recorded in Riverside County. The records search included a 1.6-kilometer (1-mile) search radius around the proposed Project alignment and consisted of a detailed examination of the USGS' 7.5-minute Perris Quadrangle. The purpose of the literature search was to identify prehistoric or historic archaeological sites or historic buildings and structures previously recorded within and around the Project alignment. The EIC also reviewed the NRHP, the CRHR, local registers, and Archaeological Determinations of Eligibility. The records were reviewed to accomplish the following:

- Identify cultural resources (e.g. archaeological sites) in the Project site and surrounding areas;
- Identify and determine the adequacy of previous cultural resources studies in the Project site;
- Develop management recommendations for cultural resources within or adjacent to the Project site; and
- Assess what additional cultural resources studies would need to be undertaken for the proposed Project.

The EIC completed its search on April 19, 2021. The results of the records searches are presented below in Subsection 5.1.

4.1.2 Native American Sacred Lands File Review

An inquiry was made of the NAHC on October 9, 2020, to request a review of the Sacred Lands File database regarding the possibility of Native American cultural resources and/or sacred places in the Project vicinity that are not documented on other databases. The results of the Sacred Land File Review are presented below in Subsection 5.2.

4.1.3 Archaeological Field Survey

Psomas surveyed the Project alignment and a 500-foot buffer on either side of the alignment on June 8, 2021 (Figure 4 and Figure 5). The entire Project alignment and buffer was surveyed by walking evenly spaced transects spaced no more than 10 meters (32 feet) apart. The archaeologist examined all areas considered highly sensitive for cultural resources and the ground surface for the presence of the following:

- Prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools);
- Historic artifacts (e.g., metal, glass, ceramics);
- Sediment discoloration that might indicate the presence of a cultural midden; and
- Depressions and other features indicative of the former presence of structures or buildings (e.g., post holes, foundations).

Psomas maintained transect accuracy in the Project area using a Garmin global positioning system (GPS) receiver and Project field maps. A field notebook and a digital camera were used to record the survey conditions and findings.



FIGURE 4: PROPOSED PROJECT ALIGNMENT (LOOKING SOUTH)



FIGURE 5: AREA WITHIN 500-FOOT BUFFER (LOOKING SOUTH)

5.0 REPORT OF FINDINGS

5.1 CALIFORNIA HISTORICAL RECORDS INFORMATION SYSTEM

5.1.1 Eastern Information Center (EIC)

The EIC record search identified 19 prior cultural resources studies within 1.6 km (1 mile) of the Project site (Table 2). The studies were completed between 1983 and 2017. Three of the cultural resource studies (RI-02777; RI-04974; RI-10168) traversed the Project alignment. The 19 studies consisted of archaeological field studies and literature reviews. The prior studies are listed in Table 2, and the records search results summary letter from EIC is presented as Attachment A.

TABLE 2
PRIOR CULTURAL RESOURCES STUDIES
WITHIN 1-MILE OF THE PROJECT SITE

Report	Author	Year	Study	Type of Study	Proximity to Project Site
RI-01665	Wirth Associates	1983	Devers-Serrano-Villa Park Transmission System Supplement to the Cultural Resources Technical Report	Cultural Resources Study	Outside
RI-02223	Swope, K.	1988	An Archaeological Assessment of the Homeland/Green Acres Sewer Facility Project Located near Perris in Riverside County	Cultural Resources Study	Outside
RI-02286	Drover, C.E.	1988	A Cultural Resource Inventory – Lycon Development Group Vesting Tentative Tract Near Perris, California	Cultural Resources Study	Outside
RI-02306	Breece, W.H. & B. Padon	1988	An Archaeological Survey of Three Proposed Locations for the Southwest County Justice Center, Riverside County	Cultural Resources Study	Outside
RI-02447	J. McKenna	1989	An Archaeological Assessment of Approximately 520 Acres of Land Proposed by Park West Associates, Located East of the City of Perris, Riverside County, California	Cultural Resources Study	Outside
RI-02777	Barros, P.	1988	Archival Records Search and Cultural Resources Survey of Perris Property Partners, Riverside County, California	Cultural Resources Study	Within
RI-03139	McKenna, J.	1991	Historical and Archaeological Investigations of the Proposed May Ranch II Project Area, Perris, Riverside County, California	Cultural Resources Study	Outside
RI-03216	Becker, K.M.	1991	A Cultural Resources Reconnaissance of the Riverglen Specific Plan, Approximately 332 Acres in the City of Perris, Riverside County, California	Cultural Resources Study	Outside
RI-03342	Hogan, M.	1991	Cultural Resource Assessment Tentative Tract 25901/CZ 6014, Perris Area of Riverside County, California	Cultural Resources Study	Outside
RI-03472	Weber, C.	1992	Cultural Resources Survey: Perris Marketplace APN 310-110-001, 002, 004 through 024, 027, 028, 030, and 031	Cultural Resources Study	Outside
RI-03834	Sturm, B.	1994	Historic Property Survey Report for the Evans Avenue/Ellis Road/I-215 Interchange in Perris, California	Cultural Resources Study	Outside

TABLE 2
PRIOR CULTURAL RESOURCES STUDIES
WITHIN 1-MILE OF THE PROJECT SITE

Report	Author	Year	Study	Type of Study	Proximity to Project Site
RI-04974	Hoover, A. & W.R. Gillean	2005	A Phase I Archaeological Survey Report for the Phase II Perris Desalter Transmission Pipeline Project, Near Perris, Riverside County, California	Cultural Resources Study	Within
RI-06239	Tang, B., M. Hogan, & J. Smallwood	2004	Historical/Archaeological Resources Survey Report, Assessor Parcel Number 329-030-051, Near the Unincorporated Community of Romoland, Riverside County, California	Cultural Resources Study	Outside
RI-06355	Tang, B., M. Hogan, & M. Wetherbee	2004	Historical/Archaeological Survey Report: Perris Valley RWRF Expansion, in the City of Perris, Riverside County, California	Cultural Resources Study	Outside
RI-06578	Tang, B.T., M. Hogan, D. Encarnation, & J. Smallwood	2006	Historical/Archaeological Resources Survey Report: The Venue at Perris, City of Perris, Riverside County, California	Cultural Resources Study	Outside
RI-06833	McKenna, J.	2006	A Phase I Cultural Resources Survey of the Antelope and Ellis, LLC Project Area (80 Acres), East of the City of Perris, Riverside County, California	Cultural Resources Study	Outside
RI-08101	McCormick, S. & S. Gust	2006	Archaeological and Paleontological Resources Assessment Report for the Green Valley Project, Perris, California	Cultural Resources Study	Outside
RI-08771	Tang, B.	2010	Preliminary Historical/Archaeological Resources Study Southern California Regional Rail Authority 9SCRRA) Perris Valley Line Positive Train Control (PTC) Project in and the near the Cities of Riverside, Perris, and Menifee Riverside County, California CRM Tech Contract No. 2444	Cultural Resources Study	Outside
RI-10168	Duran, C. & H. Hass	2017	Dunlap Drive Pipeline Replacement Project Cultural Resources Assessment, Riverside County, California	Cultural Resources Study	Within
Source: EIC 2021					

The EIC records searches also identified 13 previously recorded cultural resources within 1.6 km (1 mile) of the Project site (Table 3). The previously recorded resources include three historic sites, three prehistoric sites, one historic isolated artifact, and six isolated prehistoric artifacts. The historic sites and isolated finds consist of historic refuse (trash) and a segment of the California Southern Railway. The prehistoric sites and isolated finds include the remnants of prehistoric lithic scatters consisting of debitage (flaked stone left behind from tool manufacturing), stone tools (choppers and scrapers) and ground stone fragments (metates and pestles). None of the 13 archaeological sites and/or isolated discoveries are located within the proposed Project alignment.

TABLE 3
PREVIOUSLY RECORDED CULTURAL RESOURCES
WITHIN 1-MILE OF THE PROJECT SITE

Primary Number	Trinomial	Resource Description	Recording of Events	Proximity to Project Site
P-33-000706	CA-RIV-000706	Historic: refuse scatter	1993 (D. McLean, S. Schneeberger, D. Taylor)	Outside
P-33-004177	CA-RIV-004177	Prehistoric: lithic scatter	1991 (K. Becker. S. Evans, & E. Knell)	Outside
P-33-004178	CA-RIV-004178	Prehistoric: lithic scatter	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-004179	CA-RIV-004179	Prehistoric: lithic scatter	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-004180	CA-RIV-004180	Historic: refuse scatter	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-012617	—	Prehistoric: isolated lithic artifact	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-012618	—	Prehistoric: isolated lithic artifact	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-012619	—	Prehistoric: isolated lithic artifact	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-012620	—	Prehistoric: isolated lithic artifact	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-012621	—	Historic: isolated historic artifact	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-012728	—	Prehistoric: isolated ground stone artifact	1991 (Michael Hogan & Mari Pritchard-Parker)	Outside
P-33-012822	—	Prehistoric: isolated ground stone artifact	1991 (K. Becker, S. Evans, & E. Knell)	Outside
P-33-015743	CA-RIV-008196	Historic: segment of the California Southern Railway	"2005 (P. Easter. And P. Beedle)	Outside
Source: EIC 2021				

5.2 NATIVE AMERICAN SACRED LANDS FILE REVIEW RESULTS

On October 9, 2020, Psomas requested that the NAHC conduct a search of its Sacred Lands File (SLF) to determine if cultural resources important to Native Americans have been recorded in the Project site or in the immediate vicinity. The results of the NAHC SLF search were received on October 12, 2020 and were negative. However, it should be noted that the records maintained by the NAHC and the CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. Furthermore, a tribe may be the only source of information regarding the existence of a tribal cultural resource. The review included a list of tribes affiliated with the Project area. These tribes (see Table 4) will be contacted by the District and offered an opportunity to consult on the Project to comply with the requirements of AB 52. The Sacred Lands Files search results summary letter from the NAHC is presented as Attachment B.

TABLE 4
NAHC TRIBAL REPRESENTATIVES CONTACT LIST

Tribal Organization	Ethnographic Affiliation	Contact(s)
Agua Caliente Band of Cahuilla Indians	Cahuilla	Jeff Grubbe; Patricia Garcia-Plotkin
Augustine Band of Cahuilla Mission Indians	Cahuilla	Amanda Vance
Cabazon Band of Mission Indians	Cahuilla	Doug Welmas
Cahuilla Band of Indians	Cahuilla	Daniel Salgado
Campo Band of Diegueno Mission Indians	Diegueno	Ralph Goff
Ewiiaapaayp Band of Kumeyaay Indians	Diegueno	Robert Pinto; Michael Garcia
La Posta Band of Diegueno Mission Indians	Diegueno	Gwendolyn Parada; Javaughn Miller
Los Coyotes Band of Cahuilla and Cupeno Indians	Cahuilla	Ray Chapparosa
Morongo Band of Mission Indians	Cahuilla; Serrano	Robert Martin
Pala Band of Mission Indians	Cupeno; Luiseno	Shasta Gaughen
Pechanga Band of Luiseno Indians	Luiseno	Mark Macarro
Quechan Tribe of the Fort Yuma Reservation	Quechan	Jill McCormick
Ramona Band of Cahuilla	Cahuilla	Joseph Hamilton
Rincon Band of Luiseno Indians	Luiseno	Cheryl Madrigal; Bo Mazetti
Manzanita Band of Kumeyaay Nation	Diegueno	Michael Linton
Santa Rosa Band of Cahuilla Indians	Cahuilla	Lovina Redner
Mesa Grande Band of Diegueno Mission Indians	Diegueno	Michael Linton
Soboba Band of Luiseno Indians	Cahuilla; Luiseno	Isaiah Vivanco
Torres-Martinez Desert Cahuilla	Cahuilla	Thomas Tortez
Sycuan Band of Luiseno Indians	Cahuilla; Luiseno	Scott Cozart

5.3 WESTERN SCIENCE CENTER PALEONTOLOGICAL RESOURCES RECORD SEARCH

The WSC paleontological literature review and record searches did not identify paleontological resources within the Project site or the 1-mile search buffer/radius. Furthermore, the WSC noted that the geologic units underlying the Project site are mapped entirely as active valley deposits dating to the Holocene which is estimated to be between 5,000 years old and present. While Holocene alluvial units are of high preservation value, material found is unlikely to be fossil material due to the relatively modern associated dates of the deposits. However, the WSC also noted that if development requires any substantial depth of disturbance, the likelihood of reaching older Holocene or Late Pleistocene alluvial sediments would increase. The paleontological search results summary letter from WSC is presented as Attachment C.

5.4 ARCHAEOLOGICAL/PALEONTOLOGICAL FIELD SURVEY RESULTS

As indicated above, Psomas senior archaeologist Charles Cisneros surveyed the Project site on June 8, 2021. The archaeological field survey identified one new archaeological and/or cultural resources. The resource is an isolated historic archaeological feature (ISO-01) consisting of the remains of a post and barbed wire fence (Figure 6). The posts measure 5 feet and 11 inches from the ground surface to the top of the post. The crossbeam measures 5 feet and 10 inches across and was constructed using double-head nails (Figure 7). Several strands of barbed wire are also in the vicinity of the posts. No paleontological resources were identified on the survey.



FIGURE 6: POST AND BARBED WIRE FENCE (ISO-01)



FIGURE 7: DOUBLE-HEAD NAIL

6.0 DISCUSSION AND IMPACT ANALYSIS

Psomas conducted archaeological and paleontological resources field investigations within the proposed Project site on June 8, 2021. The main goal of the investigations was to gather and analyze information needed to determine if the Project would have a significant impact on properties eligible for the CRHR and to provide mitigation measures for those resources. The results of the 2021 EIC cultural resources records searches identified 13 previously recorded cultural resources within 1.6 km (1 mile) of the Project site. The previously recorded resources include three historic sites, three prehistoric sites, one historic isolated artifact, and six isolated prehistoric artifacts. The historic sites and isolated finds consist of historic refuse (trash) and a segment of the California Southern Railway. The prehistoric sites and isolated finds include the remnants of prehistoric lithic scatters consisting of debitage (flaked stone left behind from tool manufacturing), stone tools (choppers and scrapers), and ground stone fragments (metates and pestles). None of the 13 archaeological sites and/or isolated discoveries are located within the proposed Project alignment. Furthermore, the NAHC Sacred Lands File search was negative for sacred sites. Additionally, the WSC paleontological resource records search was negative for paleontological resources (i.e. fossils).

The 2021 field survey (archaeological and paleontological) identified one isolated historic archaeological feature (ISO-01) consisting of the remains of a post and barbed wire fence. However, it should be noted that ISO-01 is not eligible for the CRHR due to its limited data potential and lack of archaeological association. And while the study of agricultural features, such as wood posts and barbed wire often provide insight into how the landscape was used by early-settlers, these types of cultural resources are neither unique nor unusual for this region of California; therefore they are ineligible for the CRHR.

No prehistoric archaeological resources were identified within the proposed Project alignment; however, as noted above, numerous prehistoric sites and isolated finds (one or two artifacts) have been documented in previous archaeological studies near the Project alignment, but not within the proposed Project alignment. This indicates past human activities dating to the prehistoric period of Southern California took place near the Project alignment, from the extraction, processing, and subsequent use of raw materials, to short-term occupation.

No paleontological resources were identified during the 2021 field survey.

7.0 MITIGATION AND PROTOCOLS

While no significant archaeological and/or cultural resources eligible for the CRHR were identified in the proposed Project alignment, several cultural resources from both the prehistoric and historic periods of California history have been documented within 1-mile of the Project site.

Furthermore, no paleontological resources were identified in the Project site and the results from the WSC suggest the Holocene alluvial sediments located within the Project site are unlikely to contain fossil material due to the relatively modern associated dates of the deposits. However, the WSC also noted that if development requires any substantial depth of disturbance, the likelihood of reaching older Holocene or Late Pleistocene alluvial sediments would increase.

Therefore, Psomas recommends the following mitigation measures in the event of discovery of archaeological and/or paleontological resources and adherence to existing regulations and protocols for the discovery of human remains. Furthermore, additional mitigation measures may be requested during the AB 52 tribal consultation process.

7.1 MITIGATION MEASURE 1

The District shall retain a professional Archaeologist prior to the issuance of grading permits. The Archaeologist shall monitor the initial ground-altering activities within undisturbed native sediment for the Project alignment for the unearthing of previously unknown archaeological and/or cultural resources. The Archaeological Monitor shall maintain daily field notes and a photographic record and report all finds to the District in a timely manner. The Archaeological Monitor shall be equipped to record and salvage cultural resources that may be unearthed during grading activities. The Archaeological Monitor shall be empowered to temporarily halt or divert grading equipment to allow recording and removal of the unearthed resources.

If archaeological resources are discovered at the Project alignment, the handling of the discovered resources will occur as described below. All artifacts discovered shall be inventoried and analyzed by the professional Archaeologist. If any artifacts of Native American origin are discovered, all activities in the immediate vicinity of the find (within a 50-foot radius) shall stop, and the Archaeological Monitor shall notify the District and tribes identified by the California NAHC as being affiliated with the area. A designated Native American observer from one of the tribes identified by the NAHC as being affiliated with the area shall be retained to help analyze the Native American artifacts for identification as everyday life and/or religious or sacred items, cultural affiliation, temporal placement, and function, as deemed possible. The significance of Native American resources shall be evaluated in accordance with the provisions of CEQA and shall consider the religious beliefs, customs, and practices of the affiliated tribes. All items found in association with Native American human remains shall be considered grave goods or sacred in origin and subject to special handling.

Native American artifacts that are relocated/reburied at the Project alignment would be subject to a fully executed relocation/reburial agreement with the assisting Native American tribes or bands. This shall include measures and provisions to protect the reburial area from any future impacts. Relocation/reburial shall not occur until all cataloging and basic recordation have been completed. Native American artifacts that cannot be avoided or relocated at the Project alignment shall be prepared in a manner for curation at an accredited curation facility in Riverside County that meets federal standards per 36 CFR Part 79 and makes the artifacts available to other archaeologists/researchers for further study. The Archaeological Monitor shall deliver the Native American artifacts, including title, to the accredited curation facility within a reasonable amount of time, along with the fees necessary for permanent curation.

Non-Native American artifacts shall be inventoried, assessed, and analyzed for cultural affiliation, personal affiliation (prior ownership), function, and temporal placement. After analysis and reporting, these artifacts will be subjected to curation or returned to the property owner, as deemed appropriate. All artifacts, except for human remains and related grave goods or sacred/ceremonial objects, belong to the property owner.

7.2 MITIGATION MEASURE 2

In the event that potential paleontological resources are discovered during ground-disturbing activities, work will stop in that area and within 30 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures may include monitoring by a qualified paleontologist during construction-related ground-disturbing activities. The monitor will retain the option to reduce monitoring if it is determined that the sediments were previously disturbed. Monitoring may also be reduced if potentially fossiliferous units are not present or, if present, are determined to have a low potential to contain fossil resources. The monitor will be equipped to salvage fossils and samples of sediments as they are unearthed and will be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Recovered specimens will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Specimens will be curated into a professional, accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, will be prepared and will signify completion of the mitigation.

7.3 REGULATORY REQUIREMENT — PROTOCOLS FOR THE DISCOVERY OF HUMAN REMAINS

All discovered human remains shall be treated with respect and dignity. California State law (*California Health & Safety Code* Section 7050.5) and federal law and regulations ([*Archaeological Resources Protection Act* 16 *United States Code* (USC) 470 & 43 CFR 7], [*Native American Graves Protection & Repatriation Act* 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1–7]) require a defined protocol if human remains are discovered in the state of California regardless of whether the remains are modern or archaeological in origin.

Upon discovery of human remains, all work must cease immediately within 100-feet of the discovery; nothing would be disturbed; the area would be secured; and the County Coroner's Office would be notified. The Coroner has two working days to examine the remains after notification. The property owner of the site shall also be called and informed of the discovery. If the remains are located on federal lands, federal land managers/federal law enforcement/federal archaeologist would be informed as well due to complementary jurisdiction issues. The Coroner would determine if the bones are historic/archaeological or a modern legal case.

7.3.1 Modern Remains

If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials would be notified by the Coroner to conduct the required procedures. Work would not resume until law enforcement has released the area.

7.3.2 Archaeological Remains

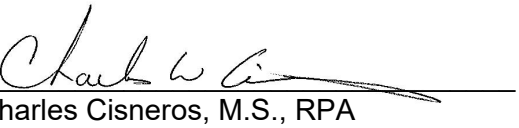
If the remains are determined to be archaeological in origin and there are no legal concerns, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands. The proposed Project alignment is located on non-federal lands.

Remains Discovered on Non-Federally Owned/Managed Lands

After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal concern, the Coroner would make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American, he/she would contact the NAHC by telephone within 24 hours. The NAHC would immediately notify the person it believes to be the most likely descendant of the remains. The most likely descendant has 48 hours to make recommendations to the landowner for treatment or disposition of the human remains. If the descendant does not make recommendations within 48 hours, the landowner would rebury the remains in an area of the property secure from further disturbance. If the landowner does not accept the descendant's recommendations, the owner or the descendant may request mediation by the NAHC.

8.0 CERTIFICATION

I hereby certify that the statements furnished above in this draft report and in the attached exhibits present the data and information required for this draft Phase I Cultural Resource Inventory, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: July 1, 2021 SIGNED: 

Charles Cisneros, M.S., RPA
Senior Archaeologist

9.0 REFERENCES CITED

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ATTACHMENT A

EASTERN INFORMATION CENTER RECORDS SEARCH RESULTS

ReportNum	DocAddlCitLetter	Status	OtherIDs	Xrefs	Authors	CitYear	CitMonth	CitTitle	CitPublisher
RI-01665			NADB-R - 1081956; Voided - MF-1759		Wirth Associates	1983	Jan	Devers-Serrano-Villa Park Transmission System Supplement to the Cultural Resources Technical Report - Public Review Document and Confidential Appendices	Wirth Associates
RI-02223			NADB-R - 1082654; Submitter - 0936; Voided - MF-2410		Karen K. Swope	1988	Mar	An Archaeological Assessment of the Homeland/Green Acres Sewer Facility Project Located Near Perris in Riverside County	Archaeological Research Unit, U.C. Riverside
RI-02286			NADB-R - 1082724; Voided - MF-2480		DROVER, C.E.	1988		A CULTURAL RESOURCE INVENTORY - LYCON DEVELOPMENT GROUP VESTING TENTATIVE TRACT NEAR PERRIS, CALIFORNIA	AUTHOR(S)
RI-02306			NADB-R - 1082763; Voided - MF-2507		William H. Breece and Beth Padon	1988	Aug	An Archaeological Survey of Three Proposed Locations for the Southwest County Justice Center, Riverside County	Cultural Resource Management Division, LSA Associates, Inc.
RI-02447			NADB-R - 1082938; Voided - MF-2678		HATHAWAY AND MCKENNA	1989		AN ARCHAEOLOGICAL ASSESSMENT OF APPROXIMATELY 520 ACRES OF LAND PROPOSED BY PARK WEST ASSOCIATES, LOCATED EAST OF THE CITY OF PERRIS, RIVERSIDE COUNTY, CALIFORNIA	AUTHOR(S)
RI-02777			NADB-R - 1083387; Voided - MF-2981		Phillip de Barros	1988	Oct	Archival Records Search and Cultural Resources Survey of Perris Property Partners Property, Riverside County, California	Chambers Group, Inc.
RI-03139			NADB-R - 1083691; Voided - MF-3358		MCKENNA, JEANETTE A. ET AL.	1991		HISTORICAL AND ARCHAEOLOGICAL INVESTIGATIONS OF THE PROPOSED MAY RANCH II PROJECT AREA, PERRIS, RIVERSIDE COUNTY, CALIFORNIA	AUTHOR(S)
RI-03216			NADB-R - 1083794; Voided - MF-3440		BECKER, KENNETH M.	1991		A CULTURAL RESOURCES RECONNAISSANCE OF THE RIVERGLEN SPECIFIC PLAN, APPROXIMATELY 332 ACRES IN THE CITY OF PERRIS, RIVERSIDE COUNTY, CALIFORNIA	RMW PALEO ASSOCIATES
RI-03342			NADB-R - 1083960; Submitter - 1152; Voided - MF-3581		Michael Hogan	1991	Oct	Cultural Resource Assessment: Tentative Tract 25901/CZ 6014, Perris Area of Riverside County, California	Archaeological Research Unit, U.C. Riverside Archaeological Research Unit, U.C. Riverside Archaeological Research Unit, U.C. Riverside Archaeological Research Unit, U.C. Riverside
RI-03472			NADB-R - 1083246; Voided - MF-3731		Carmen A. Weber	1992	Mar	Cultural Resources Survey: Perris Marketplace, APN 310-110-001, -002, -004 thorugh -024, -027, -028, -030, and -031	Chambers Group, Inc.
RI-03834			NADB-R - 1084700; Submitter - PPP901; Voided - MF-4179		STURM, BRADLEY	1994		HISTORIC PROPERTY SURVEY REPORT FOR THE EVANS AVENUE/ELLIS ROAD/I-215 INTERCHANGE IN PERRIS, CA	LSA ASSOCIATES
RI-04974			NADB-R - 1086336; Submitter - EMWD-05-644.ARS		HOOVER, ANNA M and WILLIAM R. GILLEAN	2005		A PHASE IA RCHAEOLOGICAL SURVEY REPORT FOR THE PHASE II PERRIS DESALTER TRANSMISSION PIPELINE PROJECT, NEAR PERRIS, RIVERSIDE COUNTY, CALIFORNIA.	L&L ENVIRONMENTAL, INC.
RI-06239			NADB-R - 1087602; Submitter - CRM TECH CONTRACT #1281		TANG, BAI, MICHAEL HOGAN, and JOSH SMALLWOOD	2004		HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT, ASSESSOR PARCEL NUMBER 329-030-051, NEAR THE UNINCORPORATED COMMUNITY OF ROMOLAND, RIVERSIDE COUNTY, CALIFORNIA	CRM TECH
RI-06355			NADB-R - 1087718; Submitter - CONTRACT #1380		TANG, BAI, MICHAEL HOGAN, and MATTHEW WETHERBEE	2004		HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT: PERRIS VALLEY RWRF EXPANSION, IN THE CITY OF PERRIS, RIVERSIDE COUNTY, CA	CRM TECH
RI-06578			NADB-R - 1087945; Submitter - CONTRACT #1749A		TANG, BAI, MICHAEL HOGAN, DEIRDRE ENCARNACION, and JOSH SMALLWOOD	2006		HISTORICAL/ARCHEOLOGICAL RESOURCES SURVEY REPORT, THE VENUE AT PERRIS, CITY OF PERRIS, RIVERSIDE COUNTY, CA	CRM TECH
RI-06833			Submitter - Job No. 01-06-01-1179		Jeanette A. McKenna	2006	Feb	A Phase I Cultural Resources Survey of the Antelope and Ellis, LLC Project Area (80 Acres), East of the City of Perris, Riverside Co., California	McKenna et al.
RI-08101			Submitter - 1364		McCormick, Steven and Sherri Gust	2006		Archaeological and Paleotolgical Resources Assessment Report For The Green Valley Project, Perris, California	Cogstone Resource Management Inc.
RI-08771					Bai 'Tom' Tang	2010		Preliminary Historical/Archaeological Resource Study Southern California Regional Rail Authority (SCRRA) Perris Valley Line Positive Train Control (PTC) Project In and near the Cities of Riverside, Perris, and Menifee Riverside County, California CRM TECH Contract No. 2444	CRM TECH
RI-10168					C. Duran and H. Hass	2017	Aug	Dunlap Drive Pipeline Replacement Project Cultural Resources Assessment, Riverside County, California	Rincon Consultants

ReportNum	CitPages	CitMaps	ReportType	InventorySize	InventoryDisclosure	InventoryCollections	InventoryNotes	Resources	ResourceCount	HasInformals	Counties	Maps	Address	PLSS
RI-01665	315		Archaeological, Field study	1320 Acres surveyed	Not for publication	No		33-002529, 33-002530, 33-002531, 33-002591, 33-002592, 33-013336, 33-013366, 33-013545	8	No	Riverside	ALBERHILL, BEAUMONT, CABAZON, CORONA NORTH, CORONA SOUTH, EL CASCO, LAKE FULMOR, LAKE MATHEWS, LAKEVIEW, PERRIS, REDLANDS, SAN BERNARDINO SOUTH, SAN JACINTO, SANTIAGO PEAK, SUNNYMEAD		
RI-02223	6	1	Archaeological, Field study	320 Acres surveyed	Not for publication	No			0	No	Riverside	PERRIS		
RI-02286	10		Archaeological, Field study	110 Acres surveyed					0	No	Riverside	PERRIS		
RI-02306	13	5	Archaeological, Field study	120 Acres surveyed	Not for publication	No			0	No	Riverside	BACHELOR MTN, PERRIS, ROMOLAND		
RI-02447	20		Archaeological, Field study	520 Acres surveyed					0	No	Riverside	PERRIS		
RI-02777	10	1	Archaeological, Field study	640 Acres surveyed	Not for publication	No			0	No	Riverside	PERRIS		
RI-03139	34		Archaeological, Field study	305 Acres surveyed					0	No	Riverside	PERRIS		
RI-03216	20							33-004177, 33-004178, 33-004179, 33-004180	4	No	Riverside	PERRIS		
RI-03342	19	3	Archaeological, Field study	39.5 Acres surveyed	Not for publication	No			0	No	Riverside	PERRIS		
RI-03472	25	7	Archaeological, Field study	63.4 Acres surveyed	Not for publication	No			0	No	Riverside	PERRIS		
RI-03834	64		Archaeological, Field study	75 Acres surveyed	Not for publication	No		33-000706	1	No	Riverside	PERRIS		
RI-04974	63		Archaeological, Field study	ca. 8.7 Miles x 40 Feet surveyed					0	No	Riverside	PERRIS, ROMOLAND		
RI-06239	19		Archaeological, Field study	4.27 Acres surveyed					0	No	Riverside	PERRIS		
RI-06355	19		Archaeological, Field study	150 Acres surveyed					0	No	Riverside	PERRIS		
RI-06578	20		Archaeological, Field study	71 Acres surveyed	Not for publication	No			0	No	Riverside	PERRIS		
RI-06833	63	2	Archaeological, Field study	ca. 76 Acres surveyed	Not for publication	No			0	No	Riverside	PERRIS	(APN 309-380-001)	T4S R3W Sec. 35 SBBM
RI-08101	34		Archaeological, Field study	1106 Acres surveyed	Not for publication	No		33-007705	1	No	Riverside	PERRIS, ROMOLAND		
RI-08771	31		Archaeological, Field study		Not for publication	No			0	No	Riverside	PERRIS, RIVERSIDE EAST, ROMOLAND, SAN BERNARDINO SOUTH, STEELE PEAK		
RI-10168	33	1	Archaeological, Literature search		Not for publication	No			0	Yes	Riverside	PERRIS		T4S R3W Sec. 21,22,27,28 SBBM

PrimaryString	TrinomialString	ResourceName	Status	OtherIDs	Xrefs	ResType	Age	InfoBase	Attribs	ResourceDisclosure	ResourceCollections	AccessionNo
P-33-000706	CA-RIV-000706			Other - LSA - E/E -1			Historic			Not for publication	No	
P-33-004177	CA-RIV-004177			Other - RSP-1		Site	Prehistoric	Survey	AP02	Not for publication	No	n/a
P-33-004178	CA-RIV-004178			Other - RSP-2			Prehistoric			Not for publication	No	
P-33-004179	CA-RIV-004179			Other - RSP-3			Prehistoric			Not for publication	No	
P-33-004180	CA-RIV-004180			Other - RSP-4-H		Site	Historic	Survey	AH04	Not for publication	No	n/a
P-33-012617						Other	Prehistoric					
P-33-012618						Other	Prehistoric					
P-33-012619				Other - I-3		Site	Prehistoric	Survey	AP02	Not for publication	No	n/a
P-33-012620				Other - I-4		Site	Prehistoric	Survey	AP02	Not for publication	No	n/a
P-33-012621				Other - I-5		Site	Historic	Survey	AH04	Not for publication	No	n/a
P-33-012728				Other - 1152-1		Site	Prehistoric	Survey	AP04	Not for publication	No	n/a
P-33-012822				Other - I-6		Site	Prehistoric	Survey	AP04	Not for publication	No	n/a
P-33-015743	CA-RIV-008196			National Register - 6Z; Other - BNSF Railroad; Other - San Jacinto Valley Railway; Other - Santa Fe Valley Railroad; Other - CRM TECH 2225-1H; Other - Burlington Northern Santa Fe Railroad; Other - 3CS; Other - SJ-32; Other - CRM TECH 2917-1; Other - CRM TECH 3084; Other - SRI-3145		Site	Historic	Survey	AH07	Not for publication	No	n/a

PrimaryString	CollectionsFacility	ResourceNotes	RecordingEvents	Reports	CountyName	Maps	Address	PLSS	UTM
P-33-000706			1993 (D. McLean, S. Schneeberger, D. Taylor, LSA)	RI-00534, RI-03834	Riverside	PERRIS			
P-33-004177	n/a		1991 (K. Becker. S. Evans, & E. Knell, RMW Paleo Associates, Inc., 23352 Madero, Suite J, Mission Viejo, CA 92691 (714) 770-8042)	RI-03216	Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W SW¼ of NE¼ of Sec. 4 SBBM	Zone 11 481940mE 3736220mN NAD27 (none)
P-33-004178			1991 (K. Becker, S. Evans, E. Knell, RMW Paleo Associates, Inc., 23352 Madero, Suite J, Mission Viejo CA 92691 (714) 770-8042)	RI-03216	Riverside	PERRIS			
P-33-004179			1991 (K. Becker, S. Evans, E. Knell, RMW Paleo Associates, Inc., 23352 Madero, Suite J, Mission Viejo, CA 92691 (714) 770-8042)	RI-03216	Riverside	PERRIS			
P-33-004180	n/a		1991 (K. Becker, S. Evans, E. Knell, RMW Paleo Associates, 23352 Madero, Suite J, Mission Viejo, CA 92691 (714) 770-8042)	RI-03216	Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W NW¼ of SE¼ of Sec. 4 SBBM	Zone 11 481620mE 3735840mN NAD27 (none)
P-33-012617					Riverside	PERRIS			
P-33-012618					Riverside	PERRIS			
P-33-012619	n/a		1991 (K. Becker, S. Evans, and E. Knell, RMW Paleo Associates)		Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W SW¼ of NE¼ of Sec. 4 SBBM	Zone 11 482000mE 3736110mN NAD27 (none)
P-33-012620	n/a		1991 (K. Becker, S. Evans, and E. Knell, RMW Paleo Associates)		Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W SW¼ of NE¼ of Sec. 4 SBBM	Zone 11 482125mE 3736300mN NAD27 (none)
P-33-012621	n/a		1991 (K. Becker, S. Evans, and E. Knell, RMW Paleo Associates)		Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W NW¼ of SE¼ of Sec. 4 SBBM	Zone 11 481955mE 3735915mN NAD27 (none)
P-33-012728	n/a		1991 (Michael Hogan and Mari Pritchard-Parker, ARU UCR)		Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W NW¼ of SE¼ of Sec. 3 SBBM	Zone 11 483680mE 3735590mN NAD27 (none)
P-33-012822	n/a		1991 (K. Becker, S. Evans, and E. Knell, RMW Paleo Associates)		Riverside	PERRIS	n/a n/a n/a (APN n/a)	T5S R3W NW¼ of SE¼ of Sec. 4 SBBM	Zone 11 481880mE 3735590mN NAD27 (none)
P-33-015743	n/a		2005 (P.Easter. And P. Beedle, Applied EarthWorks, Inc.); 2006 (Peggy Beedle, Applied EarthWorks, Inc.); 2007 (Theordore Cooley, Jones & Stokes); 2007 (Craft, Andrea, Jones and Stokes); 2008 (Daniel Ballester, CRM TECH); 2009 (M.C. Hamilton, J. George, Applied EarthWorks, Inc.); 2010 (S. Justus and A. Giacinto, ASM Affiliates); 2011 (Joshua Trampier, Statistical Research, Inc.); 2012 (Stacie Wilson and Jill Gibson, AECOM); 2012 (C. Cotterman, E. Denniston, ECORP Consulting); 2015 (Daniel Ballester, CRM TECH); 2016 (Michael Hogan, CRM TECH)	RI-07528, RI-07833, RI-08955, RI-08980, RI-09002, RI-09021, RI-09364, RI-10069, RI-10160	Riverside	HEMET, PERRIS, ROMOLAND, SAN BERNARDINO SOUTH, SAN JACINTO, STEELE PEAK, WINCHESTER	mulitple multiple multiple (APN n/a)	T5S R2W Sec. 19 SBBM; T5S R3W NE¼ of SE¼ of Sec. 14 SBBM; T5S R3W NW¼ of SE¼ of Sec. 13 SBBM; T2S R4W Sec. 7 SBBM; T2S R4W Sec. 18 SBBM; T2S R4W Sec. 19 SBBM	Zone 11 497841mE 3731819mN NAD27 (Culvert #1); Zone 11 496340mE 3731152mN NAD27 (Culvert #2); Zone 11 485815mE 3732415mN NAD83 (1/11/2007 T.C. update); Zone 11 485551mE 3732804mN NAD83 (4/30/2010 S.J. and A.G. update); Zone 11 483286mE 3734165mN NAD27 (J.T. 4/20/2011 update); Zone 11 488857mE 3728234mN NAD27 (4/5/2012 AECOM update)

ATTACHMENT B

NATIVE AMERICAN HERITAGE COMMISSION SEARCH RESULTS

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 12, 2020

Charles Cisneros
Psomas

Via Email to: Charles.Cisneros@psomas.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Dunlap Project, Riverside County

Dear Mr. Cisneros:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Riverside County
10/12/2020

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Band of Kumeyaay Indians
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

Ewiiaapaayp Band of Kumeyaay Indians
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Dunlap Project, Riverside County.

Native American Heritage Commission
Tribal Consultation List
Riverside County
10/12/2020

Los Coyotes Band of Cahuilla and Cupeño Indians
Shane Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

Ramona Band of Cahuilla
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramona-nsn.gov

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosacahuilla-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Dunlap Project, Riverside County.

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92583 Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody Martinez, Chairperson
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Thomas Tortez, Chairperson
P.O. Box 1160 Cahuilla
Thermal, CA, 92274
Phone: (760) 397 - 0300
Fax: (760) 397-8146
tmchair@torresmartinez.org

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Dunlap Project, Riverside County.

ATTACHMENT C

WESTERN SCIENCE CENTER PALEONTOLOGY RECORDS SEARCH RESULTS

WESTERN SCIENCE CENTER

Psomas
Charles Cisneros
225 South Lake Avenue, Suite 100
Pasadena, CA 91101

May 19, 2021

Dear Mr. Cisneros,

This letter presents the results of a record search conducted for the Project 3EAS020103 in the city of Perris, Riverside County, California. The project site is located along Dunlap Drive in Township 4 South and 5 South, Range 3 West in Section 33, 34 and 4 on the *Perris, CA USGS* 7.5 minute quadrangle.

The geologic units underlying this project are mapped entirely as active valley deposits dating to the late Holocene which is estimated to be between 5,000 years old and the present (Morton, Bovard & Alvarez, 2003). While Holocene alluvial units are considered to be of high preservation value, material found is unlikely to be fossil material due to the relatively modern associated dates of the deposits. However, if development requires any substantial depth of disturbance, the likelihood of reaching older Holocene or Late Pleistocene alluvial sediments would increase. The Western Science Center does not have localities within the project area or within a 1 mile radius.

While the presence of any fossil material is unlikely, if excavation activity for the Project 3EAS020103 disturbs deeper sediment dating to the earliest parts of the Holocene or Late Pleistocene periods, the material would be scientifically significant. Excavation activity associated with the development of the project area is unlikely to be paleontologically sensitive, but caution during development should be observed.

If you have any questions or would like further information, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

Darla Radford
Collections Manager

Appendix D

Energy Calculations

Energy Use Summary

Construction Phase (gallons/construction perioc	Gasoline	Diesel
Construction Vehicles	1,267	1,841
Worker Trips	773	3
Vendor Trips	49	1
Haul Trucks	1	578
Total	**2,090**	**2,423**

Operations Phase (gallons/year)		Gasoline	Diesel	Natural Gas (kBTU/yr)	Electricity (kWh/yr)
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
All Land Uses		0	0	0	0

Offroad Construction Equipment Energy Use

PhaseName	OffRoadEquipmentType	OffRoadEquipmentUnitAmount	UsageHours	HorsePower	Load Factor	Horsepower Category	Num Days	Year	Fuel Consumption Rate (gal/hour)		Fuel Type	Total Fuel Consumption (gal/construction period)	
Demolition	Concrete/Industrial Saws	1	8	81	0.73	100	35	2021	4.7		Gasoline	964	
Demolition	Rubber Tired Dozers	0	1	247	0.4	300	35	2021	4.5		Diesel	0	
Demolition	Tractors/Loaders/Backhoes	2	6	97	0.37	100	35	2021	1.6		Diesel	247	
Paving	Cement and Mortar Mixers	0	6	9	0.56	25	35	2021	0.4		Gasoline	0	
Paving	Pavers	1	7	130	0.42	100	35	2021	1.7		Diesel	178	
Paving	Paving Equipment	1	8	132	0.36	100	35	2021	1.6		Diesel	166	
Paving	Rollers	1	7	80	0.38	100	35	2021	1.7		Diesel	158	
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	100	35	2021	1.6		Diesel	165	
Trenching	Cranes	1	8	231	0.29	300	35	2021	3.3		Diesel	267	
Trenching	Excavators	1	8	158	0.38	175	35	2021	2.9		Diesel	307	
Trenching	Forklifts	1	4	89	0.2	100	35	2021	2.0		Diesel	56	
Trenching	Other General Industrial Equipme	1	8	88	0.34	100	35	2021	1.4		Diesel	133	
Trenching	Tractors/Loaders/Backhoes	1	8	97	0.37	100	35	2021	1.6		Diesel	165	
Trenching	Welders	1	8	46	0.45	50	35	2021	2.4		Gasoline	304	
										Total	**Gasoline**		**1,267**
										Total	**Diesel**		**1,841**

Onroad Construction Energy Use

Year 2021

Vehicle Types	MPG by Fuel Type			Population by Fuel Type			
	GAS	DSL	ELEC	GAS	DSL	ELEC	Total
LDA	30.0	47.5		6,444,755	55,086	107,407	6,499,841
LDT1	25.8	22.3		715,053	416	3,766	715,469
LDT2	23.8	34.7		2,207,489	12,809	17,083	2,220,298
LHDT1	10.4	21.2		176,982	113,082		290,064
LHDT2	9.1	19.2		29,883	44,616		74,500
MCY	36.4			286,161			286,161
MDV	19.4	26.6		1,569,538	30,444	7,447	1,599,981
MH	5.1	10.5		35,587	12,386		47,973
MHDT	5.0	10.4		25,313	122,609		147,922
HHDT	4.0	6.6		82	106,417		106,499
OBUS	5.0	8.2		5,971	4,250		10,222
SBUS	9.1	7.5		2,479	6,589		9,067
UBUS	4.8	6.0		944	14	17	958

Input							**Gasoline Consumption**			**Diesel Consumption**		
Phase Name	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker	Vendor	Haul	Worker	Vendor	Haul
Demolition	8	0	40	14.7	6.9	20						
Paving	13	2	0	14.7	6.9	20						
Paving	0	0	0	14.7	6.9	20						
Trenching	15	2	150	14.7	6.9	20						
Adjusted												
Demolition	280	0	40	14.7	6.9	20	172	0	0	1	0	122
Paving	455	70	0	14.7	6.9	20	279	24	0	1	0	0
Paving	0	0	0	14.7	6.9	20	0	0	0	0	0	0
Trenching	525	70	150	14.7	6.9	20	322	24	1	1	0	457
Total							**773**	**49**	**1**	**3**	**1**	**578**

Appendix E

EDR Hazardous Materials Database Report

Dunlap Drive Recycled Water Pipeline Project
Dunlap Drive/Ellis Avenue
Perris, CA 92585

Inquiry Number: 6209267.2s
September 29, 2020

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

DUNLAP DRIVE/ELLIS AVENUE
PERRIS, CA 92585

COORDINATES

Latitude (North):	33.7747480 - 33° 46' 29.09''
Longitude (West):	117.1911700 - 117° 11' 28.21''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	482299.0
UTM Y (Meters):	3737003.8
Elevation:	1415 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641330 PERRIS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
DUNLAP DRIVE/ELLIS AVENUE
PERRIS, CA 92585

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	MAR ILS OT MK ANNEX		ENVIROSTOR	Higher	3275, 0.620, North
A2	MARCH AFB ILS OUTER		FUDS	Higher	3277, 0.621, North

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CERS HAZ WASTE ---- CERS HAZ WASTE
US CDL ---- National Clandestine Laboratory Register
PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CA FID UST ---- Facility Inventory Database
CERS TANKS ---- California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data

CONSENT Superfund (CERCLA) Consent Decrees
INDIAN RESERV Indian Reservations
FUSRAP Formerly Utilized Sites Remedial Action Program
UMTRA Uranium Mill Tailings Sites
LEAD SMELTERS Lead Smelter Sites
US AIRS Aerometric Information Retrieval System Facility Subsystem
US MINES Mines Master Index File
ABANDONED MINES Abandoned Mines
FINDS Facility Index System/Facility Registry System
DOCKET HWC Hazardous Waste Compliance Docket Listing
ECHO Enforcement & Compliance History Information
UXO Unexploded Ordnance Sites
FUELS PROGRAM EPA Fuels Program Registered Listing
CA BOND EXP. PLAN Bond Expenditure Plan
Cortese "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings CUPA Resources List
DRYCLEANERS Cleaner Facilities
EMI Emissions Inventory Data
ENF Enforcement Action Listing
Financial Assurance Financial Assurance Information Listing
HAZNET Facility and Manifest Data
ICE ICE
HIST CORTESE Hazardous Waste & Substance Site List
HWP EnviroStor Permitted Facilities Listing
HWT Registered Hazardous Waste Transporter Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
NPDES NPDES Permits Listing
PEST LIC Pesticide Regulation Licenses Listing
PROC Certified Processors Database
Notify 65 Proposition 65 Records
UIC UIC Listing
UIC GEO UIC GEO (GEOTRACKER)
WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List
MILITARY PRIV SITES MILITARY PRIV SITES (GEOTRACKER)
PROJECT PROJECT (GEOTRACKER)
WDR Waste Discharge Requirements Listing
CIWQS California Integrated Water Quality System
CERS CERS
NON-CASE INFO NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ Well Stimulation Project (GEOTRACKER)
HWTS Hazardous Waste Tracking System
MINES MRDS Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR Hist Auto---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 04/27/2020 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAR ILS OT MK ANNEX Facility Id: 80000082 Status: Inactive - Needs Evaluation		N 1/2 - 1 (0.620 mi.)	A1	9

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

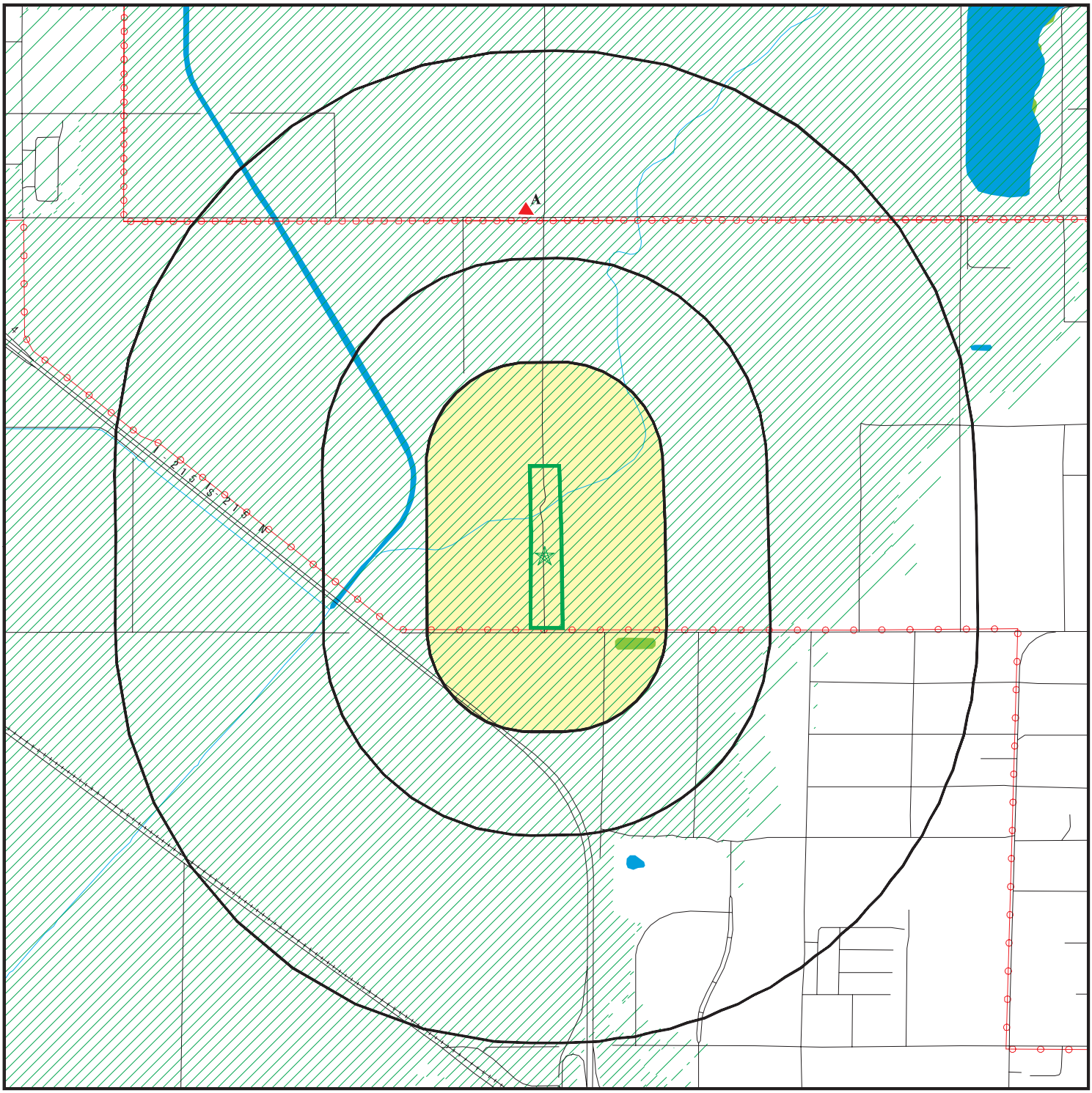
A review of the FUDS list, as provided by EDR, and dated 05/13/2020 has revealed that there is 1 FUDS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MARCH AFB ILS OUTER		N 1/2 - 1 (0.621 mi.)	A2	10

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 6209267.2S



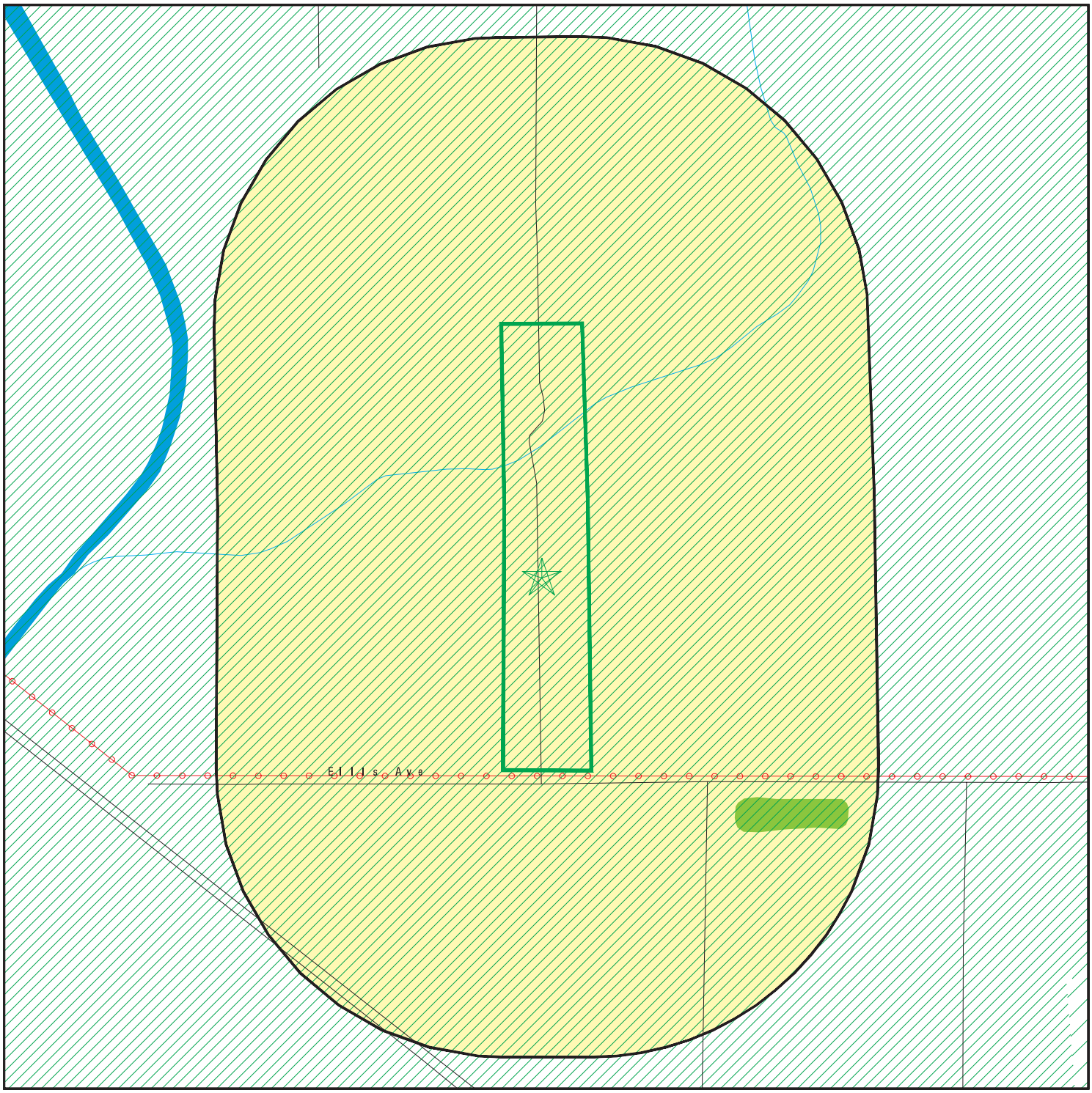
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Dunlap Drive Recycled Water Pipeline Project	CLIENT:	Psomas
ADDRESS:	Dunlap Drive/Ellis Avenue Perris CA 92585	CONTACT:	Janet Powell
LAT/LONG:	33.774748 / 117.19117	INQUIRY #:	6209267.2s
		DATE:	September 29, 2020 4:30 pm

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DETAIL MAP - 6209267.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Power transmission lines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Dunlap Drive Recycled Water Pipeline Project	CLIENT:	Psomas
ADDRESS:	Dunlap Drive/Ellis Avenue Perris CA 92585	CONTACT:	Janet Powell
LAT/LONG:	33.774748 / 117.19117	INQUIRY #:	6209267.2s
		DATE:	September 29, 2020 4:30 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	1	NR	1
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	0	0	2	0	2

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **MAR ILS OT MK ANNEX** **ENVIROSTOR** **S107736667**
North **N/A**
1/2-1 **RIVERSIDE, CA**
0.620 mi.
3275 ft. **Site 1 of 2 in cluster A**

Relative:
Higher

Actual:
1419 ft.

ENVIROSTOR:

Name:	MAR ILS OT MK ANNEX
Address:	Not reported
City,State,Zip:	RIVERSIDE, CA
Facility ID:	80000082
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	61
Senate:	31
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	DERA
Latitude:	33.78694
Longitude:	-117.1919
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CA99799F532400
Alias Type:	Federal Facility ID
Alias Name:	J09CA0121
Alias Type:	INPR
Alias Name:	80000082
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

A2
North
1/2-1
0.621 mi.
3277 ft.

MARCH AFB ILS OUTER MARKER
PERRIS, CA
Site 2 of 2 in cluster A

FUDS **1024903414**
N/A

Relative:
Higher

Actual:
1419 ft.

FUDS:

EPA Region:	09
Installation ID:	CA99799F532400
Congressional District Number:	41
Facility Name:	MARCH AFB ILS OUTER MARKER
FUDS Number:	J09CA0121
City:	PERRIS
State:	CA
County:	RIVERSIDE
Object ID:	4650
USACE District:	Los Angeles District (SPL)
Status:	Properties without projects
Current Owner:	Private Sector
EMS Map Link:	https://fudsportal.usace.army.mil/ems/ems/inventory/map/map?id=60975
Eligibility:	Eligible
Has Projects:	No
NPL Status:	Not Listed
Latitude:	33.7869444399999
Longitude:	-117.19194444

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 87

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/15/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 30

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/24/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/24/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 87

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/10/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 78

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/15/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 02/01/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 05/26/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 78

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/03/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/23/2020
Next Scheduled EDR Contact: 11/01/2020
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 85

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/04/2020
Number of Days to Update: 74

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/29/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 75

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 07/31/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2019
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 83

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 05/20/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/06/2020
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 05/04/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 72

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 79

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/29/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 75

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73
Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/23/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 86
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/31/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 79
Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/18/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 86

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/13/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/05/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 07/31/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/06/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/18/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 79

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/14/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 03/01/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/15/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 01/31/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 08/03/2020
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/15/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/13/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/25/2019
Date Data Arrived at EDR: 10/25/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 82

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/20/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/04/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/06/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/24/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/15/2020
Date Made Active in Reports: 07/21/2020
Number of Days to Update: 6

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/07/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/21/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/03/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/21/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 77

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/28/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/28/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 80

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/03/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 86

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/27/2020
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/28/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 08/03/2020
Number of Days to Update: 76
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/04/2020
Number of Days to Update: 74
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 05/04/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 72
Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/14/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/04/2020
Date Data Arrived at EDR: 06/05/2020
Date Made Active in Reports: 08/17/2020
Number of Days to Update: 73

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/24/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 08/19/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 09/04/2020
Number of Days to Update: 14

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/29/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 75

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 06/16/2020
Date Made Active in Reports: 08/28/2020
Number of Days to Update: 73

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/18/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/03/2020
Date Data Arrived at EDR: 04/07/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 8

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2020
Date Data Arrived at EDR: 05/15/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 73

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 73

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/18/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 74

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/06/2020
Date Data Arrived at EDR: 07/07/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/07/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/12/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/28/2020
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/10/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 08/21/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 08/27/2020
Number of Days to Update: 6
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 08/20/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 06/06/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3
Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 08/28/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29
Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 07/01/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 09/11/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Semi-Annually

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 04/09/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 08/02/2020
Next Scheduled EDR Contact: 10/18/2020
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/01/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 16

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/01/2020
Number of Days to Update: 13

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 06/17/2020
Date Data Arrived at EDR: 06/18/2020
Date Made Active in Reports: 09/02/2020
Number of Days to Update: 76

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 04/01/2020
Date Data Arrived at EDR: 04/20/2020
Date Made Active in Reports: 07/06/2020
Number of Days to Update: 77

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 04/16/2020
Date Data Arrived at EDR: 04/20/2020
Date Made Active in Reports: 07/08/2020
Number of Days to Update: 79

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 08/13/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/07/2020
Date Data Arrived at EDR: 05/07/2020
Date Made Active in Reports: 07/23/2020
Number of Days to Update: 77

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 08/13/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/01/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 78

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/19/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 26

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 82

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/05/2020
Date Made Active in Reports: 08/26/2020
Number of Days to Update: 113

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/05/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 73

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/21/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/14/2020
Number of Days to Update: 77

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 01/31/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 69

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/06/2020
Date Data Arrived at EDR: 07/10/2020
Date Made Active in Reports: 09/28/2020
Number of Days to Update: 80

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/13/2020
Date Data Arrived at EDR: 04/14/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 78

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/13/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/25/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/25/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/25/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/25/2020
Date Data Arrived at EDR: 04/14/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 78

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/17/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 02/25/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/28/2020
Date Data Arrived at EDR: 07/30/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 1

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 05/15/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 07/13/2020
Date Data Arrived at EDR: 07/15/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 16

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/07/2020
Date Made Active in Reports: 07/24/2020
Number of Days to Update: 78

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/08/2020
Date Made Active in Reports: 07/24/2020
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/31/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/08/2020
Date Made Active in Reports: 07/24/2020
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/31/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/05/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 73

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/03/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/10/2020
Date Made Active in Reports: 08/24/2020
Number of Days to Update: 75

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/10/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 70

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 03/10/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 70
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 78
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 04/24/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 02/25/2020
Date Data Arrived at EDR: 02/26/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 71
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 06/26/2020
Number of Days to Update: 77

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 05/04/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 72

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/08/2020
Date Data Arrived at EDR: 05/08/2020
Date Made Active in Reports: 08/03/2020
Number of Days to Update: 87

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/11/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/01/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/08/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 04/22/2020
Date Data Arrived at EDR: 04/24/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 13

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 07/28/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 08/25/2020
Date Data Arrived at EDR: 08/26/2020
Date Made Active in Reports: 09/16/2020
Number of Days to Update: 21

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/07/2020
Date Data Arrived at EDR: 07/08/2020
Date Made Active in Reports: 09/25/2020
Number of Days to Update: 79

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2020
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/04/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/26/2020
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 77

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 73

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 05/14/2020
Date Data Arrived at EDR: 05/15/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 73

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/06/2020
Next Scheduled EDR Contact: 11/16/2020
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/26/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 77

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/20/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/26/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 77

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/20/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/23/2020
Date Data Arrived at EDR: 06/29/2020
Date Made Active in Reports: 09/15/2020
Number of Days to Update: 78

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 79

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 05/12/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/31/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 12/10/2019
Number of Days to Update: 69

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/02/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

DUNLAP DRIVE RECYCLED WATER PIPELINE PROJECT
DUNLAP DRIVE/ELLIS AVENUE
PERRIS, CA 92585

TARGET PROPERTY COORDINATES

Latitude (North):	33.774748 - 33° 46' 29.09''
Longitude (West):	117.19117 - 117° 11' 28.21''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	482299.0
UTM Y (Meters):	3737003.8
Elevation:	1415 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641330 PERRIS, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

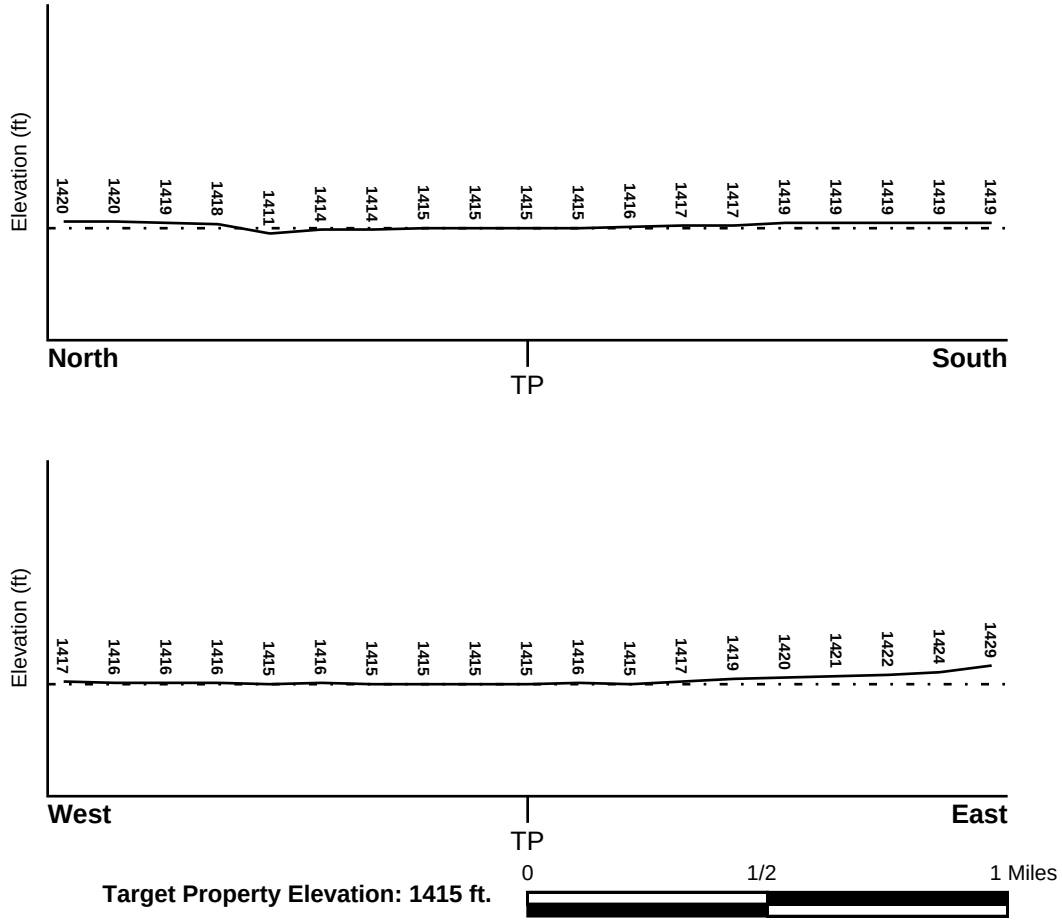
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06065C1440H	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06065C1445H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

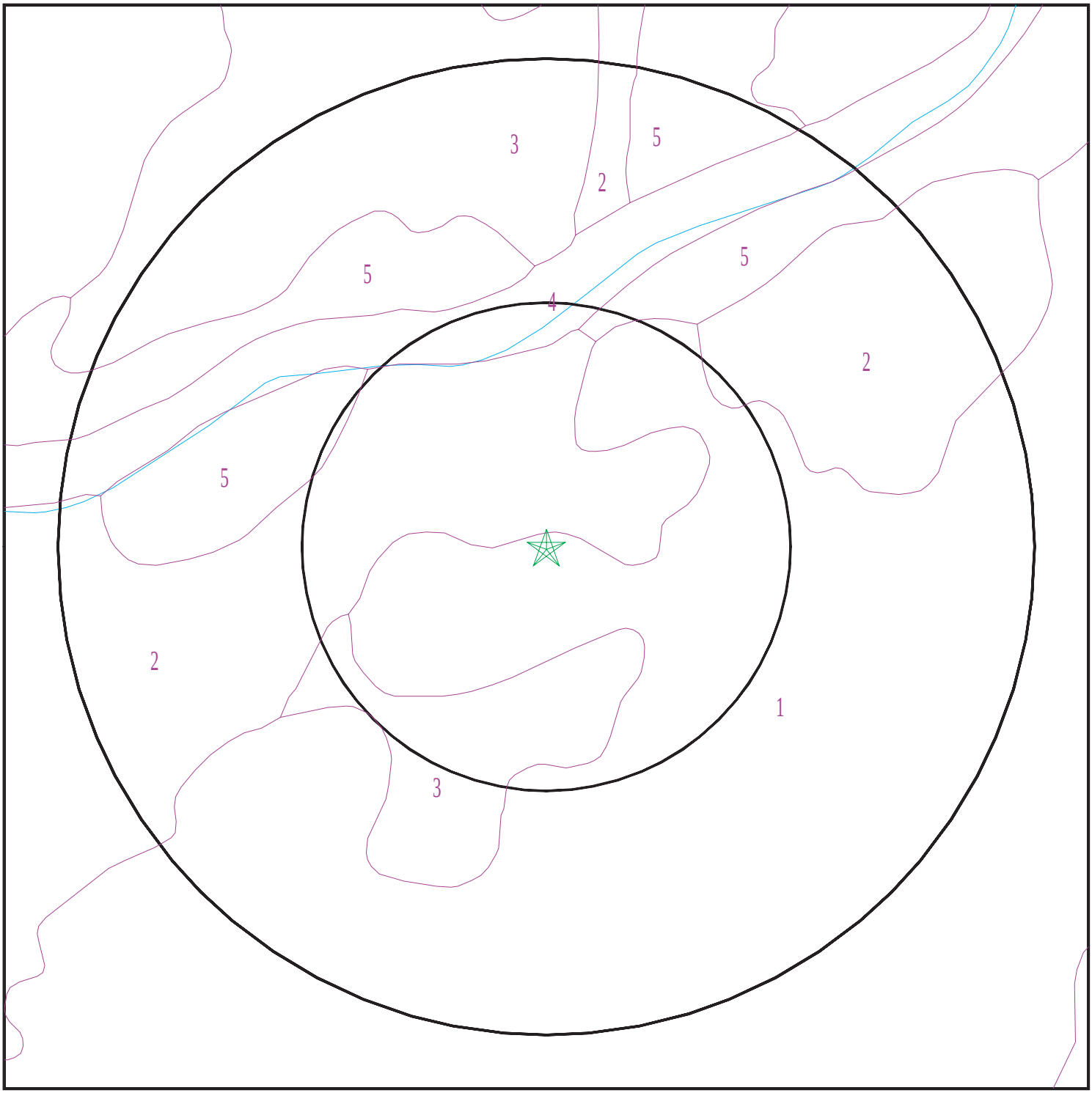
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6209267.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Dunlap Drive Recycled Water Pipeline Project	CLIENT:	Psomas
ADDRESS:	Dunlap Drive/Ellis Avenue Perris CA 92585	CONTACT:	Janet Powell
		INQUIRY #:	6209267.2s
LAT/LONG:	33.774748 / 117.19117	DATE:	September 29, 2020 4:30 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: WILLOWS

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5
2	9 inches	42 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5

Soil Map ID: 2

Soil Component Name: WILLOWS

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5
2	9 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5

Soil Map ID: 3

Soil Component Name: WILLOWS

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5
2	9 inches	42 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5

Soil Map ID: 4

Soil Component Name: RIVERWASH

Soil Surface Texture: gravelly coarse sand

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Excessively drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel.	Max: 141 Min: 42	Max: Min:

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	5 inches	59 inches	stratified extremely gravelly coarse sand to gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel.	Max: 141 Min: 42	Max: Min:

Soil Map ID: 5

Soil Component Name: WILLOWS

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5
2	9 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 9 Min: 8.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000137773	1/8 - 1/4 Mile NW
B3	USGS40000138027	1/4 - 1/2 Mile SSE
C5	USGS40000138062	1/4 - 1/2 Mile WSW
E8	USGS40000138023	1/2 - 1 Mile ESE
D9	USGS40000138046	1/2 - 1 Mile East
11	USGS40000137974	1/2 - 1 Mile SE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

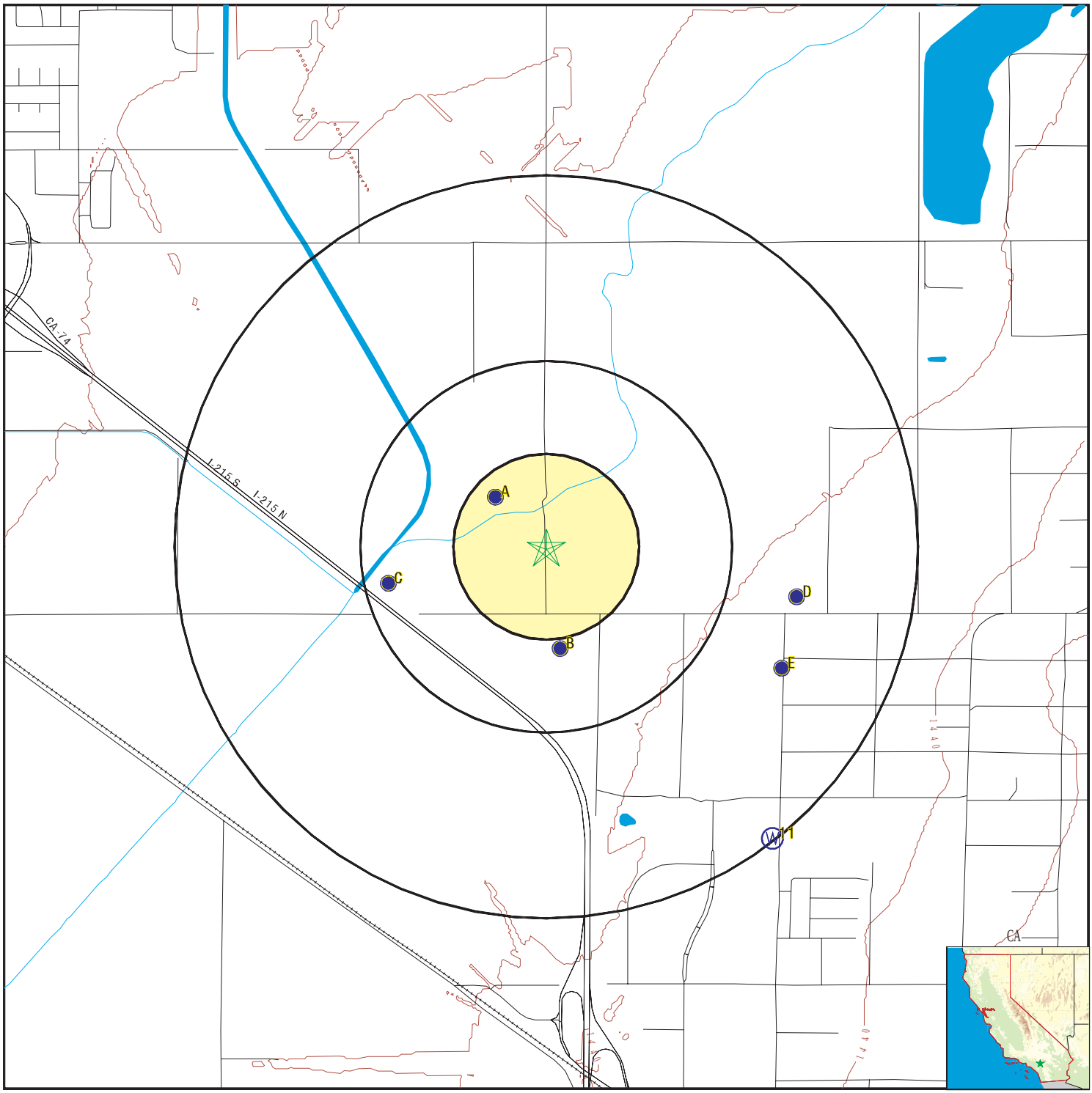
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	CADWR8000005462	1/8 - 1/4 Mile NW
B4	CADWR8000005426	1/4 - 1/2 Mile South
C6	CADWR8000005438	1/4 - 1/2 Mile WSW
D7	CADWR8000005431	1/2 - 1 Mile ESE
E10	CADWR8000005425	1/2 - 1 Mile ESE

PHYSICAL SETTING SOURCE MAP - 6209267.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Dunlap Drive Recycled Water Pipeline Project	CLIENT:	Psomas
ADDRESS:	Dunlap Drive/Ellis Avenue Perris CA 92585	CONTACT:	Janet Powell
		INQUIRY #:	6209267.2s
LAT/LONG:	33.774748 / 117.19117	DATE:	September 29, 2020 4:30 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
NW
1/8 - 1/4 Mile
Higher | **FED USGS** | **USGS40000137773**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	005S003W09Q001S	Type:	Well
Description:	Not Reported	HUC:	18070202
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1970	Well Depth:	600
Well Depth Units:	ft	Well Hole Depth:	600
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1995-06-23
Feet below surface:	96.35	Feet to sea level:	Not Reported
Note:	The site had been pumped recently.		

Level reading date:	1995-04-19	Feet below surface:	88.30
Feet to sea level:	Not Reported	Note:	Not Reported

A2
NW
1/8 - 1/4 Mile
Higher | **CA WELLS** | **CADWR8000005462**

State Well #:	05S03W09Q001S	Station ID:	6308
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	San Jacinto	Well Completion Rpt #:	Not Reported

B3
SSE
1/4 - 1/2 Mile
Higher | **FED USGS** | **USGS40000138027**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	005S003W04A001S	Type:	Well
Description:	Not Reported	HUC:	18070202
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19930923	Well Depth:	209.4
Well Depth Units:	ft	Well Hole Depth:	260
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1995-09-11
Feet below surface:	97.75	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1995-04-14	Feet below surface:	101.10
Feet to sea level:	Not Reported	Note:	Not Reported

B4
South
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR8000005426**

State Well #:	05S03W04A001S	Station ID:	6303
Well Name:	EMWD12732	Well Use:	Observation
Well Type:	Single Well	Well Depth:	208
Basin Name:	San Jacinto	Well Completion Rpt #:	Not Reported

C5
WSW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000138062**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	004S003W33Q001S	Type:	Well
Description:	ORIG DEPTH 445 SOUNDED DEPTH 386.1 FT 950407		
HUC:	18070202	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	California Coastal Basin aquifers
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19530128	Well Depth:	386
Well Depth Units:	ft	Well Hole Depth:	445
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1995-09-13
Feet below surface:	93.09	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1995-04-07	Feet below surface:	95.98
Feet to sea level:	Not Reported	Note:	Not Reported

C6
WSW
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR8000005438**

State Well #:	04S03W33Q001S	Station ID:	6413
Well Name:	EMWD12467	Well Use:	Observation
Well Type:	Single Well	Well Depth:	375
Basin Name:	San Jacinto	Well Completion Rpt #:	Not Reported

D7
ESE
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000005431**

State Well #:	04S03W34Q001S	Station ID:	6547
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0

Basin Name:	San Jacinto	Well Completion Rpt #:	Not Reported

E8
ESE **FED USGS** **USGS40000138023**
1/2 - 1 Mile
Higher

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	005S003W03C001S	Type:	Well
Description:	Not Reported	HUC:	18070202
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19930920	Well Depth:	250.85
Well Depth Units:	ft	Well Hole Depth:	260
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1995-09-11
Feet below surface:	109.26	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1995-03-31	Feet below surface:	113.61
Feet to sea level:	Not Reported	Note:	Not Reported

D9
East **FED USGS** **USGS40000138046**
1/2 - 1 Mile
Higher

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	004S003W34Q001S	Type:	Well
Description:	Not Reported	HUC:	18070202
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	133.7
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	2	Level reading date:	1995-09-13
Feet below surface:	116.85	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1995-03-31	Feet below surface:	124.42
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E10
ESE
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000005425**

State Well #:	05S03W03C001S	Station ID:	39315
Well Name:	EMWD12722	Well Use:	Observation
Well Type:	Single Well	Well Depth:	249
Basin Name:	San Jacinto	Well Completion Rpt #:	Not Reported

11
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000137974**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	005S003W03L001S	Type:	Well
Description:	Not Reported	HUC:	18070202
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19930920	Well Depth:	252
Well Depth Units:	ft	Well Hole Depth:	260
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1995-09-11
Feet below surface:	105.98	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1995-03-31	Feet below surface:	109.73
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92585	6	0

Federal EPA Radon Zone for RIVERSIDE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Appendix F

Geotechnical Baseline and Design Report

Converse Consultants
Geotechnical Engineering
Environmental & Groundwater Science
Inspection & Testing Services

GEOTECHNICAL BASELINE AND DESIGN REPORT

DUNLAP ROAD RECYCLED WATER PIPELINE REPLACEMENT

STATION NO. 387+50.00 TO 407+44.61 ALONG DUNLAP DRIVE
CITY OF PERRIS, RIVERSIDE COUNTY, CALIFORNIA

CONVERSE PROJECT NO. 19-81-188-01



Prepared For:

MICHAEL BAKER INTERNATIONAL, INC.
40810 County Center, Suite 200
Temecula, CA 92591-6022

Presented By:

CONVERSE CONSULTANTS
2021 Rancho Drive, Suite 1
Redlands, CA 92373
909-796-0544

February 4, 2020

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

February 4, 2020

Mr. Miles W Costanza, PE
Project Manager
Michael Baker International, Inc.
40810 County Center, Suite 200
Temecula, CA 92591-6022

Subject: **GEOTECHNICAL BASELINE AND DESIGN REPORT**
Dunlap Road Recycled Water Pipeline Replacement
Station 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
Converse Project No. 19-81-188-01

Dear Mr. Costanza:

Converse Consultants (Converse) is pleased to submit this report to present the geotechnical baseline and design recommendations for the Dunlap Road Recycled Water Pipeline project, located in the City of Perris, Riverside County, California. This report was prepared in accordance with our revised proposal dated June 11, 2019 and your Subconsultant Agreement dated August 21, 2019.

Based upon our field investigation, laboratory data, and analyses, the proposed project is considered feasible from a geotechnical standpoint, provided the recommendations presented in this report are incorporated into the design and construction of the project.

We appreciate the opportunity to be of service to Michael Baker International, Inc. and Eastern Municipal Water District (EMWD). Should have any questions, please do not hesitate to contact us at 909-796-0544.

CONVERSE CONSULTANTS





Hashmi S. E. Quazi, PhD, PE, GE
Principal Engineer

Robert L. Gregorek II
Senior Geologist

Dist.: 4/Addressee
HSQ/RG/ZA/kvg

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1.0 INTRODUCTION

This report presents the results of our geotechnical investigation performed for the proposed Dunlap Road Recycled Water Pipeline Replacement project along Dunlap Drive in the City of Perris, Riverside County, California. The approximate alignment location is shown in Figure No. 1, *Approximate Alignment Location Map*.

The purpose of this investigation was to determine the nature and engineering properties of the subsurface soils, and to provide baseline and design recommendations for the proposed pipeline replacement project.

This baseline establishes a contractual statement of the subsurface conditions, referred to as baseline that the Contractor can assume it will encounter during construction of the project. The contractual baseline does not represent warranties by the Owner or the actual subsurface conditions that will be encountered by the Contractor. Rather, the purpose of the stated baseline is to translate the results of the geotechnical investigation and previous experience into clear, definitive, and verifiable descriptions of anticipated subsurface conditions upon which the Contractor may rely for bidding. Through its baseline, it establishes the allocation of risk between the Contractor and the Owner for the actual conditions encountered. The Contractor is responsible for actual conditions less adverse and up to the stated baseline, regardless of assumptions made during the bid phase. Assumptions made by the Contractor which are more optimistic than the contractual baselines contained herein are made at the Contractor's own risk.

The purpose of the baseline is to provide the following.

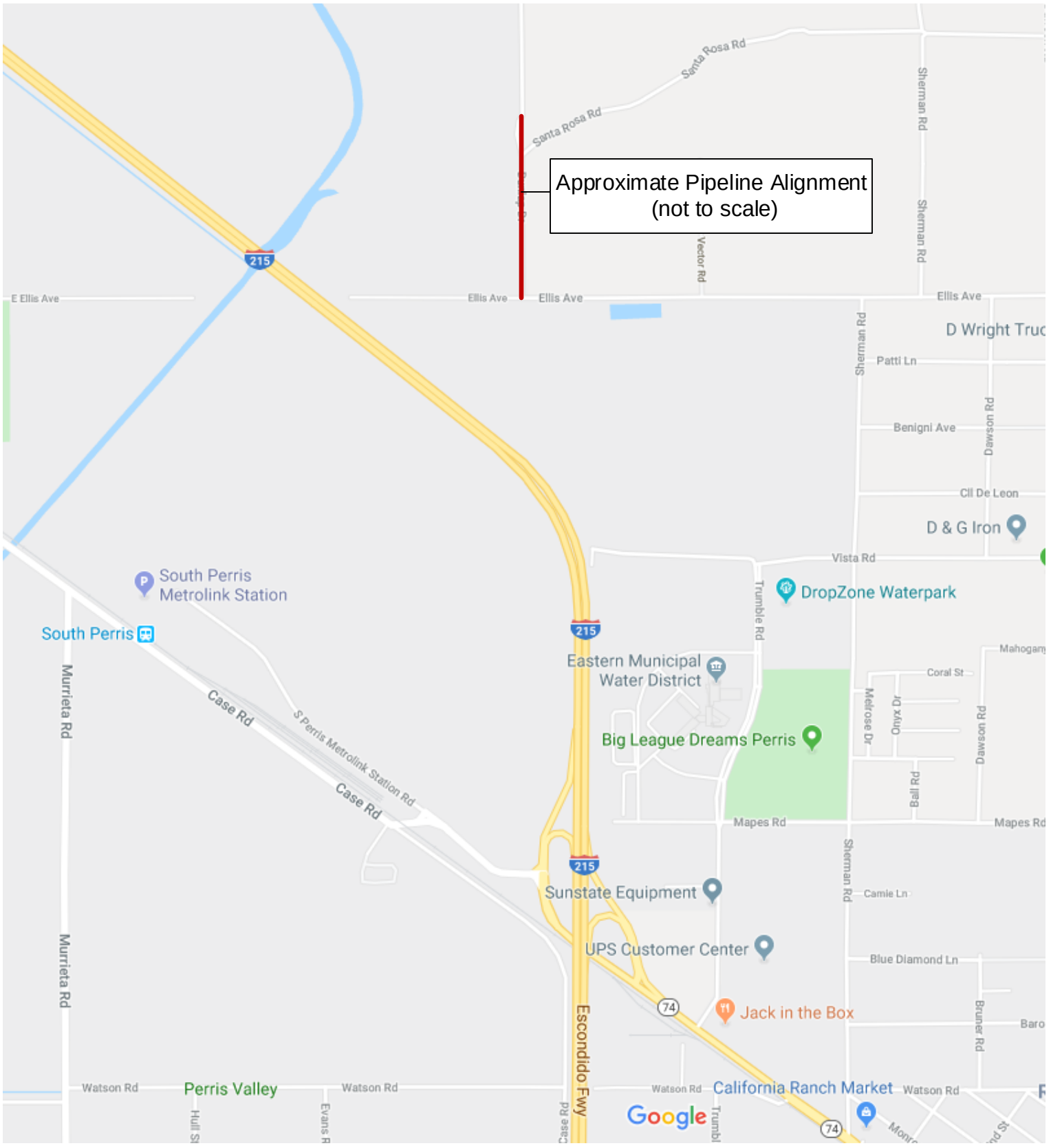
- Establish baseline for geotechnical conditions; including soil, rock, and groundwater conditions; and material behavior anticipated to be encountered during both the trenchless pipe crossing and the near surface pipe installation using open cut construction method.
- Identify selected principal construction considerations, key project constraints, and selected requirements that the Contractors need to address during bid preparation and construction.
- Provide guidance to the Owner and his Representatives in administering the Contract and monitoring Contractor performance.

The purpose of the design is to provide the following.

- Provides design parameters for the pipe based on encountered soil conditions and laboratory testing.

2.0 PROJECT DESCRIPTION

The purpose of this project will be to design and replace approximately 2,000 linear feet of 36-inch cement mortar lined and coated (CML&C) steel pipe. The pipe will extend from the intersection of Ellis Avenue and Dunlap Drive (Sta. 407+44.61) along Dunlap



Approximate Alignment Location Map

Project: Dunlap Road Recycled Water Pipeline Replacement
Location: Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No
19-81-188-01

Converse Consultants

FIGURE NO.
1

Drive crossing the San Jacinto River to Sta. 387+50 in the City of Perris. It is proposed there will be about 8 feet to 10 feet of soils cover over the pipe. It will be installed using open cut-and-cover technique except at the San Jacinto River crossing were bore and jack will be used. The approximate depth of bore and jack would be 18 feet to 20 feet bgs.

3.0 SCOPE OF WORK

The scope of this investigation included project set-up, subsurface exploration, laboratory testing, engineering analysis, and preparation of this report, as described in the following sections.

3.1 Project Set-up

As part of the project setup, we conducted the following.

- Prepared and submitted a geotechnical exploration plan for your review and approval.
- Obtained an encroachment permit from the City of Perris.
- Conducted an alignment reconnaissance and marked the borings so that drill rig access to all the locations was available.
- Notified Underground Service Alert (USA) at least 48 hours prior to the investigation to clear the locations of any conflict with existing underground utilities.
- Engaged a California-licensed driller to drill exploratory borings.

3.2 Subsurface Exploration

Four exploratory borings (BH-01 through BH-04) were drilled on September 27, 2019 along the proposed alignment. Each boring was drilled to at least the planned maximum depths of about 25.0 (BH-01 and BH-02) and 15.0 (BH-03 and BH-04) feet bgs. The planned depth of the borings (BH-01 and BH-02) was 25 feet bgs due to the bore and jack construction technique at the San Jacinto River Channel crossing. The detail of the borings is presented in the following table.

Table No. 1, Borings Details

Boring No.	Street	Approximate Station	Depth (ft)
*BH-01	Dunlap Road	388+50.00	26.5
*BH-02	Dunlap Road	394+50.00	26.5
BH-03	Dunlap Road	400+00.00	16.5
BH-04	Dunlap Road	407+00.00	16.5

(*drilled either side of the bore and jack location)

Approximate boring locations are indicated in Figure No. 2, *Approximate Boring Locations Map*. For a description of the field exploration and sampling program see Appendix A, *Field Exploration*.

3.3 Laboratory Testing

Representative soil samples were tested in the laboratory to aid in the soils classification and to evaluate the relevant engineering properties of the alignment soils. These tests included the following.

- *In-situ* moisture contents and dry densities (ASTM D2216 and D2937)
- Expansion Index (ASTM D4318)
- Sand Equivalent (ASTM D2419)
- Collapse Tests (ASTM D4546)
- Grain size distribution (ASTM D6913)
- Maximum dry density and optimum-moisture content (ASTM D1557)
- Direct shear (ASTM D3080)

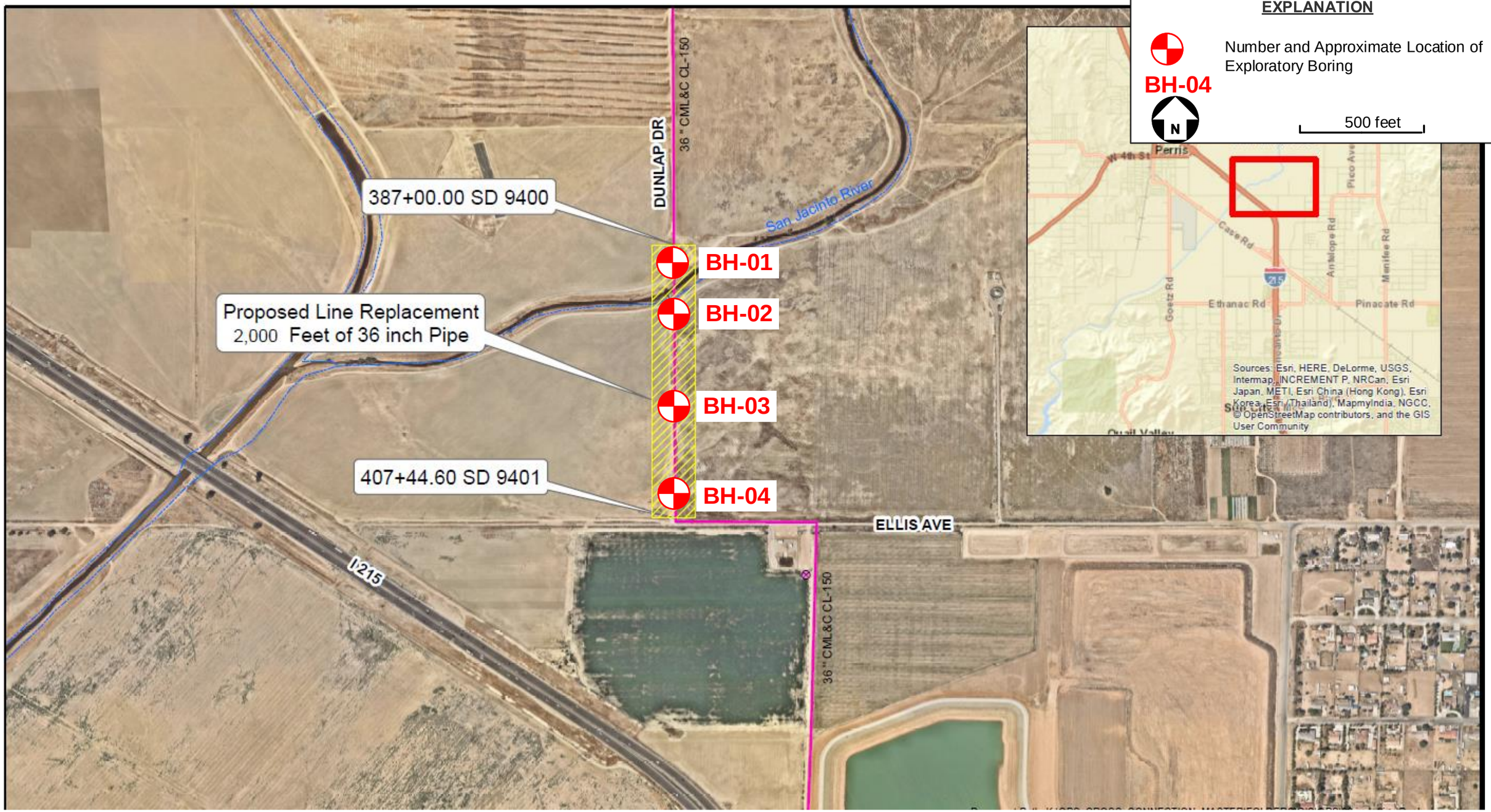
For *in-situ* moisture and dry density data, see the Logs of Borings in Appendix A, *Field Exploration*. For a description of the laboratory test methods and test results, see Appendix B, *Laboratory Testing Program.*

3.4 Analysis and Report Preparation

Data obtained from the field exploration and laboratory testing program were compiled and evaluated. Geotechnical analyses of the compiled data were performed, and this report was prepared to present our findings, conclusions and recommendations for the proposed pipeline replacement.

4.0 ALIGNMENT CONDITIONS

Dunlap Drive from Ellis Avenue to approximately 400 feet north of the San Jacinto River Channel is an approximately 15-foot-wide unpaved single lane dirt road. Agricultural fields surround the entire length of the alignment. Dunlap Drive crosses through the San Jacinto River Channel and there is an approximately 3-foot drop in elevation to the lowest point of the channel. No surface water was flowing through the channel at the time of investigation. No larger size materials (cobbles and boulders) were observed at the bottom of the channel. Traffic on this road is light. Photographs No. 1 and 2 depict the street condition along Dunlap Drive.



Project: Dunlap Road Recycled Water Pipeline Replacement
Location: Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Approximate Boring Locations Map

Project No.
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Converse Consultants

Figure No.
2



Photograph No. 1: Dunlap Drive near Ellis Avenue, facing north.



Photograph No. 2: Dunlap Drive crossing San Jacinto Channel, facing north.

5.0 SUBSURFACE CONDITIONS

Subsurface conditions along the alignment are presented below.

5.1 Subsurface Composition

Based on the exploratory borings and laboratory test results, the surface is underlain by alluvial soils consisting of silty sand and sandy clay. A silty sand to sandy silt layer was encountered at a depth between 10 and 11.5 feet bgs in the boring BH-02. Scattered gravel up to 2 inches in largest dimension was encountered in borings BH-02 through BH-04 in the upper 10 feet soils. No boring was drilled within the San Jacinto River Channel; therefore, we do not have any subsurface information below the channel bottom.

For a detailed description of the subsurface materials encountered in the exploratory borings, see Drawings No. A-2 through A-5, *Log of Borings,* in Appendix A, *Field Exploration.*

The Tunnelman's Ground Classification (USDOT, 2009) categorizes predictive soil behaviors for saturated and unsaturated conditions as presented in the Table No. 2, *Tunnelman's Ground Classification for Soils*.

Table No. 2, Tunnelman's Ground Classification for Soils

Ground Classification	Ground Behavior	Typical Soil Types
Hard	Tunnel heading may be advanced without roof support.	Cemented sand and gravel and over-consolidated clay above the ground water table.
Firm	Heading can be advanced without initial support, and final lining can be constructed before ground starts to move.	Loess above water table; hard clay, marl, cemented sand and gravel when not highly overstressed.
Raveling	Chunks or flakes of material begin to drop out of the arch or walls sometime after the ground has been exposed, due to loosening or to over-stress and "brittle" fracture (ground separates or breaks along distinct surfaces, opposed to squeezing ground). In fast raveling ground, the process starts within a few minutes, otherwise the ground is slow raveling.	Residual soils or sand with small amounts of binder may be fast raveling below the water tale, slow raveling above. Stiff fissured clays may be slow or fast raveling depending upon degree of overstress.
Squeezing	Ground squeezes or extrudes plastically into tunnel, without visible fracturing or loss of continuity, and without perceptible increase in water content. Ductile, plastic yield and flow due to overstress.	Ground with low frictional strength. Rate of squeeze depends on degree of overstress. Occurs at shallow to medium depth in clay of very soft to medium consistency. Stiff to hard clay under high cover may move in combination of raveling at excavation surface and squeezing at depth behind surface.

Ground Classification	Ground Behavior	Typical Soil Types
Swelling	Ground absorbs water, increases in volume, and expands slowly into the tunnel.	Highly preconsolidated clay with plasticity index in excess of about 30, generally containing significant percentages of montmorillonite.
Running	Granular materials without cohesion are unstable at a slope greater than their angle of repose (approx. 30º -35º). When exposed at steeper slopes they run like granulated sugar or dune sand until the slope flattens to the angle of repose.	Clean, dry angular materials.
Cohesive Running	Granular materials without cohesion are unstable at a slope greater than their angle of repose (approx. 30º -35º). When exposed at steeper slopes they run like granulated sugar or dune sand until the slope flattens to the angle of repose.	Apparent cohesion in moist sand, or weak cementation in any granular soil, may allow the material to stand for a brief period of raveling before it breaks down and runs.
Flowing	A mixture of soil and water flows into the tunnel like a viscous fluid. The material can enter the tunnel from the invert as well as from the face, crown, and walls, and can flow for great distances, completely filling the tunnel in some cases.	Below the water table in silt, sand, or gravel without enough clay content to give significant cohesion and plasticity. May also occur in highly sensitive clay when such material is disturbed.

The *in-situ* condition and engineering parameters of the various subsurface materials are presented in the sections and tables below.

5.1.1 Silty Sand (SM)

A layer of silty sand (SM) deposit is found in boring BH-01 at depth between 12.5 and 18 feet bgs. The baseline parameters for silty sand at the project alignment are shown in the following table.

Table No. 3, In-situ Baseline Parameters for Silty Sand

Parameter	Baseline Value	Range
Moisture Content (%)	1	1
Dry Unit Weight (pcf)	100	100
Friction Angle (degree)	No test was conducted	32-35**
Cohesion (psf)	No test was conducted	Negligible

* Moisture content will vary based on the time of the year and amount of precipitation.

** Typical Value

5.1.2 Silty Sand to Sandy Silt (SM-ML)

A layer of silty sand to sandy silt (SM-ML) deposit is found in boring BH-02 at depth between 10 and 11.5 feet bgs. The baseline parameters for silty sand and sandy silt at the project alignment are shown in the following table.

Table No. 4, In-situ Baseline Parameters for Silty Sand to Sandy Silt

Parameter	Baseline Value	Range
Moisture Content (%)	10	10 to 11*
Dry Unit Weight (pcf)	111	111 to 112
Friction Angle (degree)	No test was conducted	28 to 30**
Cohesion (psf)	No test was conducted	100 to 150**
Collapse Potential	0.5	0.5
Expansion Potential	No test was conducted	Very low to low**

*Moisture content will vary based on the time of the year and amount of precipitation.

** Typical Value

5.1.3 Sandy Clay (SC)

The sandy clay layers are found throughout the project alignment in each boring. Scattered gravel up to 2 inches in largest dimension was encountered in boring BH-02 through BH-04 in upper 10 feet soils. The baseline parameters for sandy clay at the project alignment are shown in the following table.

Table No. 5, In-situ Baseline Parameters for Sandy Clay

Parameter	Baseline Value	Range
Moisture Content (%)	22	14 to 30*
Dry Unit Weight (pcf)	99	88 to 110
Friction Angle (degree)	27	25 to 30
Cohesion (psf)	300	280 to 350
Collapse Potential	1.0	1.0
Expansion Potential	High	

*Moisture content will vary based on the time of the year and amount of precipitation.

5.2 Groundwater

Regional databases were reviewed to estimate expected groundwater conditions in the vicinity of the proposed pipeline.

Data from the California State Water Resources Control Board (SWRCB, 2019) was reviewed within a one-mile radius of the alignment and no recorded data was found.

Data from the National Water Information System (USGS, 2019a) was reviewed and the following is a summary of the recorded data

Table No. 6, Summary of USGS Groundwater Depth Data

Site No.	Location	Groundwater Depth Range (ft. bgs)	Date Range
334600117110001	300 feet south of Dunlap Drive	64.91	2017
334615117112101	300 feet south of Dunlap Drive	101.10-97.75	1995
334612117104601	1800 feet southeast of Dunlap Drive	113.61-109.26	1995
334622117104101	2000 feet east of Dunlap Drive	124.42-116.85	1995
334735117100701	3500 feet northeast of Dunlap Drive	139.02-138.64	1995
334753117100401	4000 feet northeast of Dunlap Drive	103.70-100.60	1995
334809117111801	5100 feet north of Dunlap Drive	59.21	1995
334436117113201	600 feet west of Dunlap Drive	96.35-88.30	1995
334624117115001	1200 feet west of Dunlap Drive	95.98-93.09	1995

Groundwater was not encountered within the maximum explored depth of 26.5 feet bgs. Based on the historical data, groundwater is generally expected to be deeper than 50 feet bgs. Dewatering is not expected to be required during the construction of the pipeline. The groundwater level may vary depending upon the seasonal precipitation and possible groundwater pumping activity in the alignment vicinity. Shallow perched groundwater may be present locally, particularly following precipitation or irrigation events.

5.3 Subsurface Variations

Based on results of the subsurface exploration and our experience, some variations in the continuity and nature of subsurface conditions within the project alignment should be anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations.

6.0 SITE CONDITIONS

No gassy atmospheric conditions (i.e. presence of methane) were smelled during the filed investigation. Gassy atmospheric conditions are a major potential risk during trenchless excavations. This should be verified during construction. Depending on the construction methods, site conditions along the alignment are presented below.

6.1 Dunlap Drive – Open Cut

The alignment runs along the Dunlap Drive from approximate Station No. 387+50.00 to 389+52.00 and 393+14.00 to 407+44.61. The approximate average depth of the excavation for the open-cut section of Dunlap Drive is anticipated to be 10 to 12 feet bgs. Excavation will be required deeper depth, if conflict with existing utilities occur in any areas. Subsurface soils generally consist of sandy clay with intermittent layer of silty sand to sandy silt layer. The sandy clay layers contain scattered gravel up to 2 inches in largest dimension. Groundwater was not encountered in the investigation borings along this alignment. The baseline of the subsurface conditions for Dunlap Drive are as follows.

- Soil Excavation – Conventional large hydraulic equipment with trenching buckets with teeth can be used for excavation of the subsurface soils. The soils to be excavated can be considered Type B soils according to OSHA (29 CFR Part 1926, Subpart P).
- Groundwater is not expected. Perched groundwater following rain events may result in minor flows of groundwater that can be readily handled by ditches, sumps, and pumps.

6.2 San Jacinto Channel Crossing – Trenchless

Bore-and-jack trenchless method from approximate Station no. 389+52.00 to 393+13.94 will be used to cross the San Jacinto Channel. The channel is approximately 3 to 6 feet deep and 200 feet wide. For bore-and-jack method, launching and receiving shafts will serve as access shafts for trenchless operations. The shaft types and locations and dimensions will be controlled by the space needed for trenchless excavations and pipe installation and will be designed by the specialized Contractor. The 36-inch diameter pipeline will be installed inside a 48-inch diameter jacked steel casing. The jacking and receiving pits are expected to be approximately 25 feet bgs. Groundwater is not expected. Perched groundwater following rain events may result in minor flows of groundwater that can be readily handled by ditches, sumps, and pumps.

Borings BH-01 (north side of the crossing) and BH-02 (south side of the crossing) were drilled for bore and jack construction. Subsurface soils generally consist of silty sand and sandy clay. The sandy clay layers contain scattered gravel up to 2 inches in largest dimension. Groundwater was not encountered in the investigation borings at the crossing. The baseline of the subsurface conditions for the San Jacinto Crossing are as follows.

- The Tunnelman’s Ground Classification for the trenchless excavation is squeezing. Squeezing is defined as Ground with low frictional strength. Rate of squeeze depends on degree of overstress. Occurs at shallow to medium depth in clay of very soft to medium consistency. Stiff to hard clay under high cover may

move in combination of raveling at excavation surface and squeezing at depth behind surface. Potential of running is anticipated to be low.

- Groundwater is not expected at bore and jack location. Perched groundwater following rain evens may result in minor flows of groundwater that can be readily handled by ditches, sumps, and pumps.
- The launching and receiving shafts soils to be excavated can be considered Type B soils according to OSHA (29 CFR Part 1926, Subpart P).
- The trenchless excavation will require full-perimeter continuous support for the entire length by means of direct jacked pipe or direct jacked crossing.

7.0 ENGINEERING GEOLOGY

The regional and local geology within the proposed project alignment are discussed below.

7.1 Regional Geology

The proposed alignment is centrally located within the boundaries of the Peninsular Ranges Geomorphic Province of Southern California in the area known as the Perris Valley.

The Peninsular Ranges Geomorphic Province consists of a series of northwest-trending mountain ranges and valleys bounded on the north by the San Bernardino and San Gabriel Mountains, on the west by the Los Angeles Basin, and on the south by the Pacific Ocean.

The province is a seismically active region characterized by a series of northwest-trending strike-slip faults. The most prominent of the nearby fault zones include the Wildomar, Lakeview, San Jacinto, and Alberhill Fault zones, all of which have been known to be active during Quaternary time.

Topography within the province is generally characterized by broad alluvial valleys separated by linear mountain ranges. This northwest-trending linear fabric is created by the regional faulting within the granitic basement rock of the Southern California Batholith. Broad, linear, alluvial valleys have been formed by erosion of these principally granitic mountain ranges.

The Perris Valley is a broad alluvial valley that lies between the San Jacinto Mountains approximately 15 miles to the east and the Santa Ana Mountains approximately 20 miles to the west. It is bounded by the Lakeview Mountains and Double Butte to the south and east, Bernasconi Hills and Mead Valley to the north, and the Gavilan Plateau to the west. The thickness of the alluvium is about 800 feet in the central area of the valley.

7.2 Local Geology

The proposed alignment is located on a broad, nearly flat alluvial plain. Regional mapping (Dibblee, 2003; Morton and Miller, 2006) indicates that the alignment is generally underlain by Holocene-aged alluvial-valley deposits. Deposits ae generally silt and clay with interbedded layers of sand. Alluvial deposits are covered with gray soil. The alignment's center, approximately located between station 387+50.00 and station 407+44.61, is underlain by very young, active alluvial deposits consisting of mostly clay with very little variation in soil composition.

8.0 FAULTING AND SEISMICITY

The location of the faults with respect to the alignment and its impact is discussed in the following sections.

8.1 Faulting

The proposed alignment is not located within a currently designated State of California or Riverside County Earthquake Fault Zone (CGS, 2007; Riverside County, 2019b). There are no known active faults projecting toward or extending across the project alignment. The potential for surface rupture resulting from the movement of nearby major faults is not known with certainty but is considered low.

The proposed alignment is situated in a seismically active region. As is the case for most areas of Southern California, ground shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project alignment. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the alignment.

The following table contains a list of active and potentially active faults within 50 kilometers of the subject alignment's generalized center. The fault parameters and distances presented in the following table are based on the output from USGS National Seismic Hazard Maps (USGS, 2008).

Table No. 7, Summary of Regional Faults

Fault Name and Section	Closest Distance (km)	Slip Sense	Length (km)	Slip Rate (mm/year)	Maximum Magnitude
San Jacinto	16.68	Strike Slip	241	n/a	7.88
Elsinore	18.65	Strike Slip	241	n/a	7.85
Chino Alt 2	35.23	Strike Slip	29	1	6.80
S. San Andreas	37.18	Strike Slip	548	n/a	8.18
Chino Alt 1	38.68	Strike Slip	24	1	6.70
San Joaquin Hills	48.87	Thrust	27	0.5	7.10

(Source: https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/)

8.2 CBC Seismic Design Parameters

Seismic parameters based on the California Building Code (CBC, 2019) are provided in the following table. These parameters were determined using a generalized center of the alignment (33.775248 N, -117.191276 W) and the Seismic Design Maps online application ATC tool.

Table No. 8, CBC Seismic Design Parameters

Parameter	Value
Site Class	"D"
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_s	1.454g
Mapped 1-second Spectral Response Acceleration, S_1	0.542g
Alignment Coefficient (from Table 1613.5.3(1)), F_a	1.0
Alignment Coefficient (from Table 1613.5.3(2)), F_v	1.758
MCE 0.2-sec period Spectral Response Acceleration, S_{Ms}	1.454g
MCE 1-second period Spectral Response Acceleration, S_{M1}	0.953g
Design Spectral Response Acceleration for short period S_{ds}	0.969g
Design Spectral Response Acceleration for 1-second period, S_{d1}	0.635g
Site Modified Peak Ground Acceleration, PGA_M	0.550g

8.3 Secondary Effects of Seismic Activity

In general, secondary effects of seismic activity include surface fault rupture, soil liquefaction, landslides, lateral spreading, and settlement due to seismic shaking, tsunamis, seiches, and earthquake-induced flooding. The alignment-specific potential for each of these seismic hazards is discussed in the following sections.

Surface Fault Rupture*:* The alignment is not located within a currently designated State of California or Riverside County Earthquake Fault Zone (CGS, 2007; Riverside County, 2019a). There are no known active faults projecting toward or extending across the alignment. The potential for surface rupture resulting from the movement of nearby major faults is not known with certainty but is considered low.

Liquefaction: Liquefaction is defined as the phenomenon in which a cohesionless soil mass suffers a substantial reduction in its shear strength due to the development of excess pore pressures. During earthquakes, excess pore pressures in saturated soil deposits may develop as a result of induced cyclic shear stresses, resulting in liquefaction.

Soil liquefaction generally occurs in submerged granular soils and non-plastic silts located within 50 feet of the ground surface during or after strong ground shaking. There are several general requirements for liquefaction to occur. They are as follows.

- Soils must be submerged.
- Soils must be loose to medium-dense.
- Soils must be relatively near the ground surface.
- Ground motion must be intense.
- Duration of shaking must be sufficient for the soils to lose shear resistance.

The alignment is located within an area not evaluated for liquefaction by The State of California (CGS, 2007). The alignment is located in a liquefaction zone designated as "moderate" per the County of Riverside (Riverside County, 2019). Due to the absence of shallow groundwater, the risk of liquefaction is considered low.

Seismic Settlement: Dry seismic settlement occurs when relatively loose unsaturated sediments above the groundwater elevation may densify and settle when subjected to ground shaking during earthquakes.

Landslides: Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes. Due to the relatively flat topography along the alignment, landslides are not considered a risk.

Lateral Spreading: Seismically induced lateral spreading involves primarily lateral movement of earth materials over deeper layers which have liquefied due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. Due to the low to moderate potential for liquefaction, the lateral spreading potential is also considered to be low.

Tsunamis: Tsunamis are large waves generated in large bodies of water by fault displacement or major ground movement. Based on the inland location of the project alignments, tsunamis do not pose a hazard to this alignment.

Seiches: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Due to the distance of enclosed bodies of water, seiching is not considered to be a risk for this alignment.

Earthquake-Induced Flooding: Dams or other water-retaining structures may fail as a result of large earthquakes, resulting in flooding. The alignment is not located in an area designated for risk of dam inundation by Riverside County (Riverside County, 2019). The risk for earthquake-induced flooding along the alignment is considered low.

9.0 LABORATORY TEST RESULTS

Laboratory testing was performed to determine the physical and chemical characteristics and engineering properties of the subsurface soils. Tests results are

included in Appendix A, *Field Exploration* and Appendix B, *Laboratory Testing Program*. Discussions of the various test results are presented below.

- In-situ Moisture and Dry Density – *In-situ* dry density and moisture content of the alignment soils were determined in accordance to ASTM Standard D2216 and D2937. Dry densities of the upper 10 feet alignment soils ranged from 84 to 102 pounds per cubic foot (pcf) with moisture contents of 17 to 30 percent. Dry densities of below 10 feet to 25 feet soils ranged from 94 to 112 pcf with moisture contents of 1 to 27 percent.
- Expansion Index – Three representative soil samples were tested to evaluate the expansion potential in accordance with ASTM Standard D4829. The tested EI ranged from 95 to 117, corresponding to high expansion.
- Sand Equivalent – Three representative bulk soil samples were tested to evaluate sand equivalent (SE) in accordance with the ASTM Standard D2419 test method. The measured sand equivalents ranged from 2 to 17.
- Collapse Potential – The collapse potential of three relatively undisturbed samples were tested under a vertical stress of up to 2.0 kips per square foot (ksf) in accordance with the ASTM Standard D4546 test method. The test results showed collapse potentials between 0. to 1.0 percent, indicating slight collapse potential.
- Grain Size Analysis – Five representative samples were tested to determine the relative grain size distribution in accordance with the ASTM Standard D6913. The test results are graphically presented in Drawings No. B-1, *Grain Size Distribution Results.* Based on the results, the predominant soil types are sandy clay.
- Maximum Dry Density and Optimum Moisture Content – Typical moisture-density relationships of two representative soil samples were tested, according to ASTM Standard D1557. The results are presented in Drawing No. B-2, *Moisture-Density Relationship Results*, in Appendix B, *Laboratory Testing Program.* The laboratory maximum dry densities were 107.0 and 107.5 pcf, with optimum moisture contents of 15.5 and 17.0 percent, respectively.
- Direct Shear – Three direct shear tests were performed in accordance with ASTM Standard D3080 on relatively undisturbed ring samples. The results of the direct shear tests are presented in Drawings No. B-3 through B-5, *Direct Shear Test Results,* in Appendix B, *Laboratory Testing Program*.

10.0 TRENCH BACKFILL RECOMMENDATIONS

Recommendations of backfill for pipe trenching and bore-and-jack are presented in the following subsections.

10.1 General

Prior to the start of construction, all existing underground utilities and appurtenances should be located within the vicinity of the proposed alignment. Such utilities should

either be protected in-place or removed and replaced during construction as required by the project specifications. All excavations should be conducted in such a manner as not to cause loss of bearing and/or lateral support of existing structures or utilities.

All debris, deleterious material, and surficial soils containing roots and perishable materials should be stripped and removed from the alignment. Deleterious material, including organics, concrete, and debris generated during excavation, should not be placed as fill.

Migration of fines from the surrounding native soils, in the case of water leak from the pipe, must be considered in selecting the gradation of the materials placed within the trench, including bedding, pipe zone and trench zone backfill, as defined in the following sections. Such migration of fines may deteriorate pipe support and may result in settlement/ground loss at the surface.

10.2 Pipeline Subgrade Preparation

The final subgrade surface should be level, firm, uniform, free of loose materials, and properly graded to provide uniform bearing and support to the entire section of the pipe placed on bedding material. Protruding oversize particles, larger than 3 inches in dimension, if any, should be removed from the trench bottom and replaced with compacted on-alignment materials.

Any loose, soft and/or unsuitable materials encountered at the pipe sub-grade should be removed and replaced with an adequate bedding material.

During the digging of depressions for proper sealing of the pipe joints, the pipe should rest on a prepared bottom for as near its full length as is practicable.

10.3 Pipe Bedding

Bedding is defined as the material supporting and surrounding the pipe to 1 foot above the pipe. Pipe bedding should follow the Standard of EMWD. Additional information for pipe bedding is provided below.

To provide uniform and firm support for the pipe, compacted granular materials such as clean sand, gravel or ¾-inch crushed aggregate, or crushed rock may be used as pipe bedding material. The sand equivalents of the tested soils were between 2 and 17. Typically, soils with sand equivalent value of 30 or more are used as pipe bedding material. The pipe designer should determine if the soils are suitable as pipe bedding material.

The type and thickness of the granular bedding placed underneath and around the pipe, if any, should be selected by the pipe designer. The load on the rigid pipes and

deflection of flexible pipes and, hence, the pipe design, depends on the type and the amount of bedding placed underneath and around the pipe.

Bedding materials should be vibrated in-place to achieve compaction. Care should be taken to densify the bedding material below the springline of the pipe. Prior to placing the pipe bedding material, the pipe subgrade should be uniform and properly graded to provide uniform bearing and support to the entire section of the pipe placed on bedding material. During the digging of depressions for proper sealing of the pipe joints, the pipe should rest on a prepared bottom for as near its full length as is practicable.

Migration of fines from the surrounding native and/or fill soils must be considered in selecting the gradation of any imported bedding material. We recommend that the pipe bedding material should satisfy the following criteria to protect migration of fine materials.

i. $\frac{D15(F)}{D85(B)} \leq 5$

ii. $\frac{D50(F)}{D50(B)} < 25$

iii. Bedding Materials must have less than 5 percent minus 75 µm (No. 200) sieve to avoid internal movement of fines.

Where,
F = Bedding Material
B = Surrounding Native and/or Fill Soils
*D*15(F) = Particle size through which 15% of bedding material will pass
*D*85(B) = Particle size through which 85% of surrounding soil will pass
*D*50(F) = Particle size through which 50% of bedding material will pass
*D*50(B) = Particle size through which 50% of surrounding soil will pass

If the above criteria do not satisfy, commercially available geofabric used for filtration purposes (such as Mirafi 140N or equivalent) may be wrapped around the bedding material encasing the pipe to separate the bedding material from the surrounding native or fill soils.

10.4 Backfill Materials

No fill should be placed until excavations and/or natural ground preparation have been observed by the geotechnical consultant. Excavated soils should be processed, including removal of roots and debris, removal of oversized particles, mixing, and moisture conditioning, before placing as compacted fill. On-site soils used as fill should meet the following criteria.

- No particles larger than 3 inches in largest dimension.

- Rocks larger than one inch should not be placed within the upper 12 inches of subgrade soils.
- Free of all organic matter, debris, or other deleterious material.
- Expansion index of 30 or less.
- Sand Equivalent greater than 15 (greater than 30 for pipe bedding).
- Contain less than 40 percent fines (passing #200 sieve).

Imported materials, if required, should meet the above criteria prior to being used as compacted fill. Any imported fills should be tested and approved by geotechnical representative prior to delivery to the site.

10.5 Compacted Fill Placement

Fill soils should be thoroughly mixed, and moisture conditioned to within ±3 percent of optimum moisture content for coarse soils and 0 to 2 percent above optimum moisture content for fine soils and compacted to at least 90 percent of the laboratory maximum dry density.

Fill materials should not be placed, spread or compacted during unfavorable weather conditions. When work is interrupted by heavy rain, filling operations should not resume until the geotechnical consultant approves the moisture and density conditions of the previously placed fill.

10.6 Trench Zone Backfill

The trench zone is defined as the portion of the trench above the pipe bedding extending up to the final grade level of the trench surface. Excavated on-site soils free of oversize particles and deleterious matter may be used to backfill the trench zone. Trench backfill should follow the Standard EMWD. Additional trench backfill recommendations are presented below.

- Trench backfill should be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers or mechanical tampers to achieve the density specified herein.
- The contractor should select the equipment and processes to be used to achieve the specified density without damage to adjacent ground, structures, utilities and completed work.
- The field density of the compacted soil should be measured by the ASTM D1556 (Sand Cone) or ASTM D6938 (Nuclear Gauge) or equivalent.
- It should be the responsibility of the contractor to maintain safe working conditions during all phases of construction.
- Observations and field tests should be performed by the project soils consultant to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort should be

made with adjustment of the moisture content as necessary, until the specified compaction is obtained.

10.7 Backfill of Jacking and Receiving Pits

The bore-and-jack crossing will require jacking and receiving pits. We anticipate that the depths of the boring/jacking and receiving pits will be approximately 18 to 20 feet below the existing grade. The pits should be backfilled following construction of the pipe crossings.

The pit bottoms should be free of trash, debris or other unsatisfactory materials at the time of backfill placement. The bottoms of the excavations should be scarified to a minimum depth of 12 inches below subgrade, moisture conditioned to within 3 percent of optimum moisture content, and recompacted to at least 90 percent of the laboratory maximum dry density.

The backfill soils should be well-blended, and moisture conditioned to within 3 percent of optimum moisture content. Particles larger than 6 inches should not be used as backfill materials. The backfill should be placed in loose lifts not exceeding 8 inches in thickness and compacted to at least 90 percent of the laboratory maximum dry density per ASTM Standard D1557. If the ground surface is to be paved, the backfill within 12 inches of the pavement subgrade should be compacted to at least 95 percent of the laboratory maximum dry density. Shoring should be removed gradually while backfilling to prevent side soils from caving.

The contractor should select the equipment and processes to be used to achieve the specified density without damage to adjacent ground, existing facilities, utilities, or completed work.

11.0 DESIGN RECOMMENDATIONS

General design recommendations, resistance to lateral loads, pipe design parameters, bearing pressures, and soil corrosivity are discussed in the following subsections.

11.1 General

Where pipes connect to rigid structures and are subjected to significant loads as the backfill is placed to finish grade, we recommend that provisions be incorporated in the design to provide support of these pipes where they exit the structures. Consideration can be given to flexible connections, concrete slurry support beneath the pipes where they exit the structures, overlaying the pipes with a few inches of compressible material, (i.e. Styrofoam, or other materials), or other techniques.

The various design recommendations provided in this section are based on the assumption that the above earthwork recommendations will be implemented.

11.2 Resistance to Lateral Loads

Resistance to lateral loads can be assumed to be provided by passive earth pressures and friction between construction materials and native soils. The resistance to lateral loads were estimated by using on-site native soils strength parameters obtained from laboratory testing. The resistance to lateral loads recommended for use in design of thrust blocks are presented in the following table.

Table No. 9, Resistance to Lateral Loads

Soil Parameters	Value
Passive earth pressure (psf per foot of depth)	200
Maximum allowable bearing pressure against native soils (psf)	1,800
Coefficient of friction between formed concrete and native soils, fs	0.30

11.3 Soil Parameters for Pipe Design

Structural design requires proper evaluation of all possible loads acting on pipe. The stresses and strains induced on buried pipe depend on many factors, including the type of soil, density, bearing pressure, angle of internal friction, coefficient of passive earth pressure, and coefficient of friction at the interface between the backfill and native soils. The recommended values of the various soil parameters for design are provided in the following table.

Table No. 10, Soil Parameters for Pipe Design

Soil Parameters	Value
Average compacted fill total unit weight (assuming 92% relative compaction), γ (pcf)	116
Angle of internal friction of soils, ϕ	28
Soil cohesion, c (psf)	200
Coefficient of friction between concrete and native soils, fs	0.30
Coefficient of friction between CML&C steel pipe and native soils, fs	0.25
Bearing pressure against native soils (psf)	1,800
Coefficient of passive earth pressure, Kp	2.77
Coefficient of active earth pressure, Ka	0.36
Modulus of Soil Reaction E' (psi)	700

11.4 Bearing Pressure for Anchor and Thrust Blocks

An allowable net bearing pressure presented in Table No. 10, *Soil Parameters for Pipe Design* may be used for anchor and thrust block design against alluvial soils. Such thrust blocks should be at least 18 inches wide.

If normal code requirements are applied for design, the above recommended bearing capacity and passive resistances may be increased by 33 percent for short duration loading such as seismic or wind loading.

11.5 Jacking Force

The pipe jacking force is function of soil conditions, over burden pressure, pipe weight, size, annular space between pipe and soil, lubricant of the pipe, and installation time. The jacking force is equal to penetration resistance plus frictional resistance. Proper assessment of jacking force is required to design and select jacking pipes and thrust block.

The penetration resistance varies along the bore-and-jack depending on soil type and shape and steering action of the boring head.

Presence of boulders (if any) in the path of bore-and-jack operation can bring a sudden increase in the jacking force. Therefore, installation of pressure relief valves at the drive pit and indicators on the control panel is desirable to ensure that the allowable jacking force is not exceeded.

Design parameters presented Table No. 11, *Jacking System Design Parameters*, may be used to design jacking force system.

Table No. 11, Jacking System Design Parameters

Locations	Parameter	Value
BH-02 and BH-03	Bearing Pressure (psf)	1,800
	At-rest Lateral Earth Pressure (psf)	58
	Passive Earth Pressure (psf)	220
	Soil Unit weight (pcf)	120
	Friction, between soil and steel	0.25

We recommend that the ultimate compressive strength of the pipe should be at least 2.5 times the design jacking loads of the pipe.

The pipe designer should determine an appropriate factor of safety to be incorporated into the design of thrust block. The bore-and-jack contractor is responsible for selection of jacking force system and the final design of thrust blocks.

The jacking operations should always be controlled to minimize loss of ground. Steel casing sections should be jacked forward concurrently with the boring operation to provide continuous ground support.

A welded steel pipe casing is required to be installed at the crossing location. The annulus should be injected with cellular concrete or grout to fill any possible voids created by the crossing operation.

12.0 CONSTRUCTION CONSIDERATIONS

Construction recommendations are presented below.

12.1 General

Prior to the start of construction, all existing underground utilities should be located along the pipeline alignment. Such utilities should either be protected in-place or removed and replaced during construction as required by the project specifications.

Vertical braced excavations are feasible along the pipeline alignment. Sloped excavations may not be feasible in locations adjacent to existing utilities (if any).

Where the side of the excavation is a vertical cut, it should be adequately supported by temporary shoring to protect workers and any adjacent structures.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act, current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the owner's representative and the competent person employed by the contractor in accordance with regulations. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

12.2 Temporary Sloped Excavations

Temporary open-cut trenches may be constructed in areas not adjacent to existing underground utilities improvements with side slopes as recommended in the table below. Temporary cuts encountering soft and wet fine-grained soils, dry loose, cohesionless soils, or loose fill from trench backfill may have to be constructed at a flatter gradient than presented below.

Table No. 12, Slope Ratios for Temporary Excavations

Soil Type	OSHA Soil Type	Depth of Cut (feet)	Recommended Maximum Slope (Horizontal:Vertical)[1]
Sandy Clay (CL)	B	0-10	1:1
		10-20	1.5:1

[1] Slope ratio is assumed to be constant from top to toe of slope, with level adjacent ground.

For steeper temporary construction slopes or deeper excavations, or unstable soil encountered during the excavation, shoring or trench shields should be provided by the contractor as necessary to protect the workers in the excavation.

Surfaces exposed in sloped excavations should be kept moist but not saturated to retard raveling and sloughing during construction. Adequate provisions should be made to protect the slopes from erosion during periods of rainfall. Surcharge loads, including construction materials, should not be placed within 5 feet of the unsupported slope edge. Stockpiled soils with a height higher than 6 feet will require greater distance from trench edges.

12.3 Shoring Design

Temporary shoring will be required where open sloped excavations will not be feasible due to unstable soils or due to nearby existing structures or facilities. Temporary shoring may consist of conventional soldier piles and lagging or sheet piles or any piles selected by contractor. The shoring for the pipe excavations may be laterally supported by walers and cross bracing or may be cantilevered. Drilled excavations for soldier piles will require the use of drilling fluids to prevent caving and to maintain an opened hole for pile installation.

The active earth pressure behind any shoring depends primarily on the allowable movement, type of backfill materials, backfill slopes, wall inclination, surcharges, and any hydrostatic pressures.

The lateral earth pressures to be used in the design of shoring is presented in the following table.

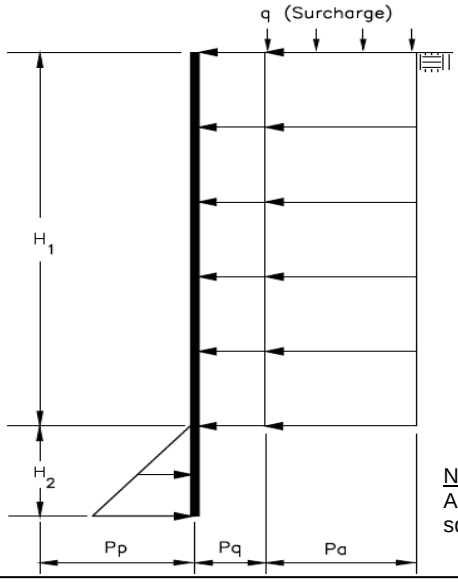
Table No. 13, Lateral Earth Pressures for Temporary Shoring

Lateral Resistance Soil Parameters*	Value
Active Earth Pressure (Braced Shoring) (psf) (A)	25
Active Earth Pressure (Cantilever Shoring) (psf) (B)	42
At-Rest Earth Pressure (Cantilever Shoring) (psf) (C)	62
Passive earth pressure (psf per foot of depth) (D)	200
Maximum allowable bearing pressure against native soils (psf) (E)	1,800
Coefficient of friction between sheet pile and native soils, fs (F)	0.25

* Parameters A through F are used in Figures No. 3 and 4 below.

Restrained (braced) shoring systems should be designed based on Figure No. 3, *Lateral Earth Pressures for Temporary Braced Excavation* to support a uniform rectangular lateral earth pressure.

Figure No. 3, Lateral Earth Pressures for Temporary Braced Excavation



Total Earth Pressure, P

P = Pq + Pa

Pq = 0.5q - incremental surcharge pressure

Pa = (A)H_1 - active earth pressure (Braced walls)

Lateral Pressure Resistance

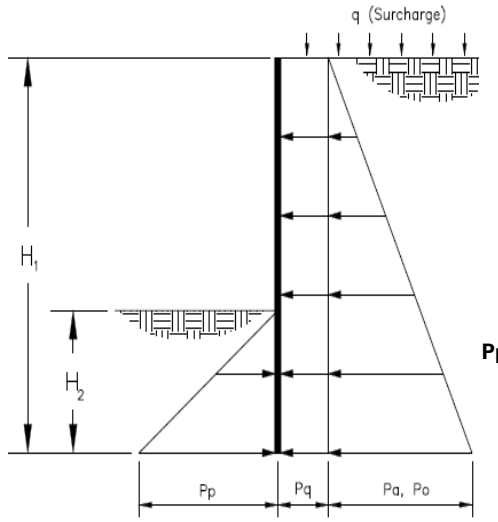
Pp = (D) H_2 ≤ (E) psf - passive earth pressure (on native soils)

μ = (F) - ultimate friction coefficient between steel sheet piles and soil

Note:
All values of height (H) in feet, pressure (P) and surcharge (q) in pounds per square foot (psf).

Unrestrained (cantilever) design of cantilever shoring consisting of soldier piles spaced at least two diameters on-center or sheet piles, can be based on Figure No. 4, *Lateral Earth Pressures on Temporary Cantilever Wall*.

Figure No. 4, Lateral Earth Pressures on Temporary Cantilever Wall



Total Earth Pressure, P

P = Pq + Pa, Po

Pq = 0.5q - incremental surcharge pressure

Pa = (B)H_1 - active earth pressure (Un-restrained)

Po = (C)H_1 - at rest earth pressure (Restrained)

Lateral Pressure Resistance

Pp = (D) H_2 ≤ (E) psf - passive earth pressure (on native soils)

μ = (F) - ultimate friction coefficient between steel sheet piles and soil

Note:
All values of height (H) in feet, pressure (P) and surcharge (q) in pounds per square foot (psf).

The provided pressures assume no hydrostatic pressures. If hydrostatic pressures are allowed to build up, the incremental earth pressures below the ground-water level should be reduced by 50 percent and added to hydrostatic pressure for total lateral pressure.

Passive resistance includes a safety factor of 1.5. The upper 1 foot for passive resistance should be ignored unless the surface is confined by a pavement or slab.

In addition to the lateral earth pressure, surcharge pressures due to miscellaneous loads, such as soil stockpiles, vehicular traffic or construction equipment located adjacent to the shoring, should be included in the design of the shoring. A uniform lateral pressure of 100 psf should be included in the upper 10 feet of the shoring to account for normal vehicular and construction traffic within 10 feet of the trench excavation. As previously mentioned, all shoring should be designed and installed in accordance with state and federal safety regulations.

The contractor should have provisions for soldier pile and sheet pile removal. All voids resulting from removal of shoring should be filled. The method for filling voids should be selected by the contractor, depending on construction conditions, void dimensions and available materials. The acceptable materials, in general, should be non-deleterious, and able to flow into the voids created by shoring removal (e.g. concrete slurry, “pea” gravel, etc.).

Excavations for the proposed pipeline should not extend below a 1:1 horizontal:vertical (H:V) plane extending from the bottom of any existing structures, utility lines or streets. Any proposed excavation should not cause loss of bearing and/or lateral supports of the existing utilities or streets.

If the excavation extends below a 1:1 (H:V) plane extending from the bottom of the existing structures, utility lines or streets, a maximum of 10 feet of slope face parallel to the existing improvement should be exposed at a time to reduce the potential for instability. Backfill should be accomplished in the shortest period of time and in alternating sections.

12.4 Bore-and-Jack Crossing Recommendations

Bore-and-jack is a trenchless construction method for installing pipes where open-cut technique is not feasible. This is a multi-stage process of construction which includes a temporary horizontal jacking platform and a starting alignment track in an entrance pit at a desired elevation. Manual control is used to jack the pipe at the starting point of the alignment with simultaneous excavation of the soil being accomplished by a rotating cutting head in the leading edge of the pipe's annular space.

The selection of trenchless pipe crossing methods and equipment depends on pipe material, length of crossing, and anticipated ground conditions, and should be made by the contractor. Bore-and-jack pipe construction operations involve the initial construction of a jacking/tunneling pit and a receiving pit at each end of the pipe segment to be jacked. Site-specific ground conditions and soil classifications pertaining to this project are presented in the following table.

Table No. 14, Site-Specific Ground Classifications

Crossing Location	Boring No.	Approximate Depth (Feet)	Station No. (Approx.)	Soil Types	Method
San Jacinto Channel	BH-01	26.5	388+50.00	CL and SM	Bore-and-jack
	BH-02	26.5	394+50.00	CL with scattered gravel, SM-ML	

The working/access shafts are utilized to remove the spoil and to transport the construction materials and personnel for a bore-and-jack project. The vertical face of the working shaft may be shored with sheet piles and/or soldier piles and lagging. The face of the shaft also can be supported by ribs and laggings. The design of sheet piling, soldier beam and lagging system may be designed according to the recommendations provided in Section 12.3, *Shoring Design*. Frequent contact grouting may be necessary to reinforce the support during construction.

The total load that can be developed in the jacking plate would depend on the depth and area of the plate. The jacking equipment should not impose a reaction of more than the allowable net bearing pressure summarized in Table No. 11, *Jacking System Design Parameters* on the stabilized soils within the jacking pit.

Grouting through the pipe casing after jacking is recommended to fill any possible voids created by the jacking operation. Jacking operations should be performed in accordance with the Standard Specifications for Public Works Construction, Sections

306-2 and 306-3 (Public Works Standards, 2018). Contractor should maintain standard grouting method so that no heave occurs.

Excavation procedures and shoring systems should be properly designed and implemented/installed to minimize the effect of settlement during construction. The contractor is responsible for minimizing impacts of crossing operations. Ground distress potential along a crossing alignment depends on a number of factors, including type of soils, type of face support, internal pressure maintained to support the face, length of unlined zone, if any, and the amount of gap between the shield and the surrounding soils. The potential of any significant ground distress at the surface can be minimized by selecting the proper equipment and construction method.

The zone of influence of properly performed pipe crossing should be limited to a distance of about 2D above the crown of the shield, where D is the diameter of the shield. When the depth of crown cover is about 2D or more, maximum ground surface settlement, if any, can be expected to be less than the thickness of the gap around the pipe. Higher ground settlement may occur for less depth of cover and inadequately supported pits can induce significant ground movement or even collapse.

It is the contractor's responsibility to document the existing pre-construction conditions of streets and any facilities, and monitor deformations during construction. We recommend that the ground surface above crossing operations be continuously monitored during construction using a surface settlement monument to make sure any vertical and horizontal movements are within allowable limits. Corrective action will be required by the contractor if deformations exceed the allowable limits.

13.0 CLOSURE

This report is prepared for the project described herein and is intended for use solely by Michael Baker International, Inc. and their authorized agents, to assist in the design and construction of the proposed project. Our findings and recommendations were obtained in accordance with generally accepted professional principles practiced in geotechnical engineering. We make no other warranty, either expressed or implied.

Converse Consultants is not responsible or liable for any claims or damages associated with interpretation of available information provided to others. Field exploration identifies actual soil conditions only at those points where samples are taken, when they are taken. Data derived through sampling and laboratory testing is extrapolated by Converse employees who render an opinion about the overall soil conditions. Actual conditions in areas not sampled may differ. In the event that changes to the project occur, or additional, relevant information about the project is brought to our attention, the recommendations contained in this report may not be valid unless these changes and additional relevant information are reviewed and the recommendations of this report are modified or verified in writing. In addition, the recommendations can only be finalized by observing actual subsurface conditions revealed during construction.

Converse cannot be held responsible for misinterpretation or changes to our recommendations made by others during construction.

As the project evolves, continued consultation and construction monitoring by a qualified geotechnical consultant should be considered an extension of geotechnical investigation services performed to date. The geotechnical consultant should review plans and specifications to verify that the recommendations presented herein have been appropriately interpreted, and that the design assumptions used in this report are valid. Where significant design changes occur, Converse may be required to augment or modify the recommendations presented herein. Subsurface conditions may differ in some locations from those encountered in the explorations, and may require additional analyses and, possibly, modified recommendations.

Design recommendations given in this report are based on the assumption that the recommendations contained in this report are implemented. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

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APPENDIX A

FIELD EXPLORATION

Our field investigation included an alignment reconnaissance and a subsurface exploration program consisting of drilling soil borings. During the alignment reconnaissance, the surface conditions were noted, and the boring locations were marked in the field using approximate distances from streets and landmarks as a guide and should be considered accurate only to the degree implied by the method used to locate them.

Four exploratory borings (BH-01 through BH-04) were drilled on September 27, 2019 along the proposed alignment. The planned maximum depths of the borings were 15 and 25 feet bgs.

The borings were advanced using a truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers for soils sampling. Encountered materials were continuously logged by a Converse geologist and classified in the field by visual classification in accordance with the Unified Soil Classification System. Where appropriate, the field descriptions and classifications have been modified to reflect laboratory test results.

Relatively undisturbed samples were obtained using California Modified Samplers (2.4 inches inside diameter and 3.0 inches outside diameter) lined with thin sample rings. The steel ring sampler was driven into the bottom of the borehole with successive drops of a 140-pound driving weight falling 30 inches. Blow counts at each sample interval are presented on the boring logs. Samples were retained in brass rings (2.4 inches inside diameter and 1.0 inch in height) and carefully sealed in waterproof plastic containers for shipment to the Converse laboratory. Bulk samples of typical soil types were also obtained.

The exact depths at which material changes occur cannot always be established accurately. Unless a more precise depth can be established by other means, changes in material conditions that occur between drive samples are indicated on the logs at the top of the next drive sample.

Following the completion of logging and sampling, the borings were backfilled with soil cuttings, tamped, and surface patched with cold asphalt concrete. The surface of the borings may settle over time, so, if construction is delayed, we recommend the owner monitor the boring locations and backfill any depressions that might occur.

For a key to soil symbols and terminology used in the boring logs, refer to Drawing No. A-1, *Unified Soil Classification and Key to Boring Log Symbols*. For logs of borings see Drawing Nos. A-2 through A-5, *Log of Borings*.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS: GRAPH	SYMBOLS: LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO 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 (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% 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 OR 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 GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

STANDARD PENETRATION TEST
Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method

DRIVE SAMPLE 2.42" I.D. sampler (CMS).

DRIVE SAMPLE No recovery

BULK SAMPLE

GROUNDWATER WHILE DRILLING

GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS			
TEST TYPE (Results shown in Appendix B)		STRENGTH	
		Pocket Penetrometer	p
		Direct Shear	ds
		Direct Shear (single point)	ds*
		Unconfined Compression	uc
CLASSIFICATION		Triaxial Compression	tx
Plasticity	pi	Vane Shear	vs
Grain Size Analysis	ma	Consolidation	c
Passing No. 200 Sieve	wa	Collapse Test	col
Sand Equivalent	se	Resistance (R) Value	r
Expansion Index	ei	Chemical Analysis	ca
Compaction Curve	max	Electrical Resistivity	er
Hydrometer	h	Permeability	perm
Disturb	Dist.	Soil Cement	sc

Apparant Density	Very Loose	Loose	Medium	Dense	Very Dense
SPT (N)	< 4	4 - 11	11 - 30	31 - 50	> 50
CA Sampler	< 5	5 - 12	13 - 35	36 - 60	> 60
Relative Density (%)	< 20	20 - 40	40 - 60	60 - 80	> 80

Consistency	Very Soft	Soft	Medium	Stiff	Very Stiff	Hard
SPT (N)	< 2	2-4	5-8	9-15	16-30	> 30
CA Sampler	< 3	3-6	7-12	13-25	26-50	> 50

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. **19-81-188-01**

Drawing No. **A-1**

Project ID: 19-81-188-01.GPJ; Template: KEY

Log of Boring No. BH-01 (Sta No. 388+50.00)

Dates Drilled: 9/27/2019 Logged by: Catherine Nelson Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1415 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE	DRY UNIT WT. (pcf)	OTHER
		ALLUVIUM **SANDY CLAY (CL):** fine to coarse-grained sand, light brown.						ei, ma
			■		10/24/33	20	101	
5								
			■		10/19/21	26	88	ds
10								
		SILTY SAND (SM): fine to coarse-grained, light brown.	■		28/36/48	1	100	se, ma
15								
		SANDY CLAY (CL): fine to medium-grained sand, brown.	■		6/7/10	28	94	
20								
			■		16/22/30	16	110	
25		**SILTY SAND (SM):** fine to medium-grained, brown.	■		14/27/40	11	111	
		End of boring at 26.5 feet bgs. No groundwater encountered. Borehole backfilled with soil cuttings and compacted by pushing down using drill rig weight on 09/27/2019.						

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. 19-81-188-01

Drawing No. A-2

Log of Boring No. BH-02 (Sta No. 394+50.00)

Dates Drilled: 9/27/2019 Logged by: Catherine Nelson Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1413 Depth to Water (ft): NOT ENCOUNTERED

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Graphic Log	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE	DRY UNIT WT. (pcf)	OTHER
							ei, se, ma, max
		■		8/13/19	29	94	
5		■		12/15/21	25	91	ds
		■		12/16/20	30	91	
10		■		12/16/42	10	112	col
15		■		18/50-6"	14	103	
20		■		6/11/14	23	97	
25		■		8/9/11	23	99	

ALLUVIUM

SANDY CLAY (CL): fine to coarse-grained sand, scattered gravel up to 2" in largest dimension, brown.

SILTY SAND TO SANDY SILT (SM-ML): fine to medium-grained, brown.

SANDY CLAY (CL): fine-grained sand, brown.

End of boring at 26.5 feet bgs.
No groundwater encountered.
Borehole backfilled with soil cuttings and compacted by pushing down using drill rig weight on 09/27/2019.

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. 19-81-188-01

Drawing No. A-3

Log of Boring No. BH-03 (Sta No. 400+00.00)

Dates Drilled: 9/27/2019 Logged by: Catherine Nelson Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1416 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE	DRY UNIT WT. (pcf)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM **SANDY CLAY (CL):** fine to medium-grained sand, scattered gravel up to 2" in largest dimension, brown.						ei, ma
			■		21/50-6"	17	102	
5			■		20/35/39	20	94	col
			■		8/16/21	20	94	
10			■		11/19/30	15	104	
			■		8/11/10	27	95	
15			■		8/10/9	20	98	
		End of boring at 16.5 feet bgs. No groundwater encountered. Borehole backfilled with soil cuttings and compacted by pushing down using drill rig weight on 09/27/2019.						

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. 19-81-188-01

Drawing No. A-4

Log of Boring No. BH-04 (Sta No. 407+00.00)

Dates Drilled: 9/27/2019 Logged by: Catherine Nelson Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1418 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE	DRY UNIT WT. (pcf)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM **SANDY CLAY (CL):** fine to medium-grained sand, scattered gravel up to 2" in largest dimension, brown.						se, ma, max
			■		20/33/36	18	102	
5			■		38/50-5"	24	84	ds
			■		40/50-4"	28	87	col
10			■		5/7/6	30	80	
15			■		6/7/9	28	90	
		End of boring at 16.5 feet bgs. No groundwater encountered. Borehole backfilled with soil cuttings and compacted by pushing down using drill rig weight on 09/27/2019.						

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. 19-81-188-01

Drawing No. A-5

APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their physical properties and engineering characteristics. The amount and selection of tests were based on the geotechnical parameters required for this project. Test results are presented herein and on the Logs of Borings, in Appendix A, *Field Exploration*. The following is a summary of the various laboratory tests conducted for this project.

***In-Situ* Moisture Content and Dry Density**

In-situ dry density and moisture content tests were performed on relatively undisturbed ring samples in accordance with ASTM Standard D2216 and D2937 test method. This test is used in soil classification and provides qualitative information on strength and compressibility characteristics of soils along the project alignment. For test results, see the Logs of Borings in Appendix A, *Field Exploration*.

Expansion Index

Three representative bulk samples were tested to evaluate the expansion potential. These tests were conducted in accordance with ASTM Standard D4829. The test results are presented in the following table.

Table No. B-1, Expansion Index Test Results

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-01	0-2.5	Sandy Clay (CL)	117	High
BH-02	0-5	Sandy Clay (CL)	106	High
BH-03	0-5	Sandy Clay (CL)	95	High

Sand Equivalent

Three representative soil samples were tested in accordance with the ASTM D2419 test method to determine the sand equivalent. The test results are presented in the following table.

Table No. B-2, Sand Equivalent Test Results

Boring No.	Depth (feet)	Soil Description	Sand Equivalent
BH-01	12.5-18	Silty Sand (SM)	17
BH-02	0-5	Sandy Clay (CL)	2
BH-04	0-5	Sandy Clay (CL)	4

Collapse

To evaluate the moisture sensitivity (collapse potential) of the encountered soils, three representative ring samples were loaded to approximately 2 kips, allowed to stabilize under load, and then submerged. The tests were performed in accordance with ASTM Standard D4546. The test results are presented in the following table.

Table No. B-3, Summary of Collapse Test Results

Boring No.	Depth (feet)	Soil Description	Percent Collapse (-) Percent Swell (+)	Collapse Potential
BH-02	10.0-11.5	Silty Sand to Sandy Silt (SM-ML)	-0.5	Slight
BH-03	5.0-6.5	Sandy Clay (CL)	-1.0	Slight
BH-04	7.5-9.0	Sandy Clay (CL)	-1.0	Slight

Grain-Size Analyses

To assist in classification of soils, mechanical grain-size analyses were performed on five select samples in accordance with the ASTM Standard D6913 test method. Grain-size curves are shown in Drawing No. B-1, *Grain Size Distribution Results* and are presented in the following table.

Table No. B-4, Grain Size Distribution Test Results

Boring No.	Depth (ft)	Soil Classification	% Gravel	% Sand	%Silt	%Clay
BH-01	0-2.5	Sandy Clay (CL)	0.0	9.0	91.0	
BH-01	12.5-18.0	Silty Sand (SM)	0.0	68.0	32.0	
BH-02	0-5	Sandy Clay (CL)	2.0	11.0	87.0	
BH-03	0-5	Sandy Clay (CL)	0.0	25.0	75.0	
BH-04	0-5	Sandy Clay (CL)	0.0	17.0	83.0	

Maximum Density and Optimum Moisture Content

Laboratory maximum dry density-optimum moisture content relationship tests were performed on two representative bulk soil samples. These tests were conducted in accordance with the ASTM Standard D1557 test method. The test results are presented in Drawing No. B-2, *Moisture-Density Relationship Results,* and are summarized in the following table.

Table No B-5, Summary of Moisture-Density Relationship Results

Boring No.	Depth (feet)	Soil Description	Optimum Moisture (%)	Maximum Density (pcf)
BH-02	0-5	Sandy Clay (CL), Brown	17.0	107.5
BH-04	0-5	Sandy Clay (CL), Brown	15.5	107.0

Direct Shear

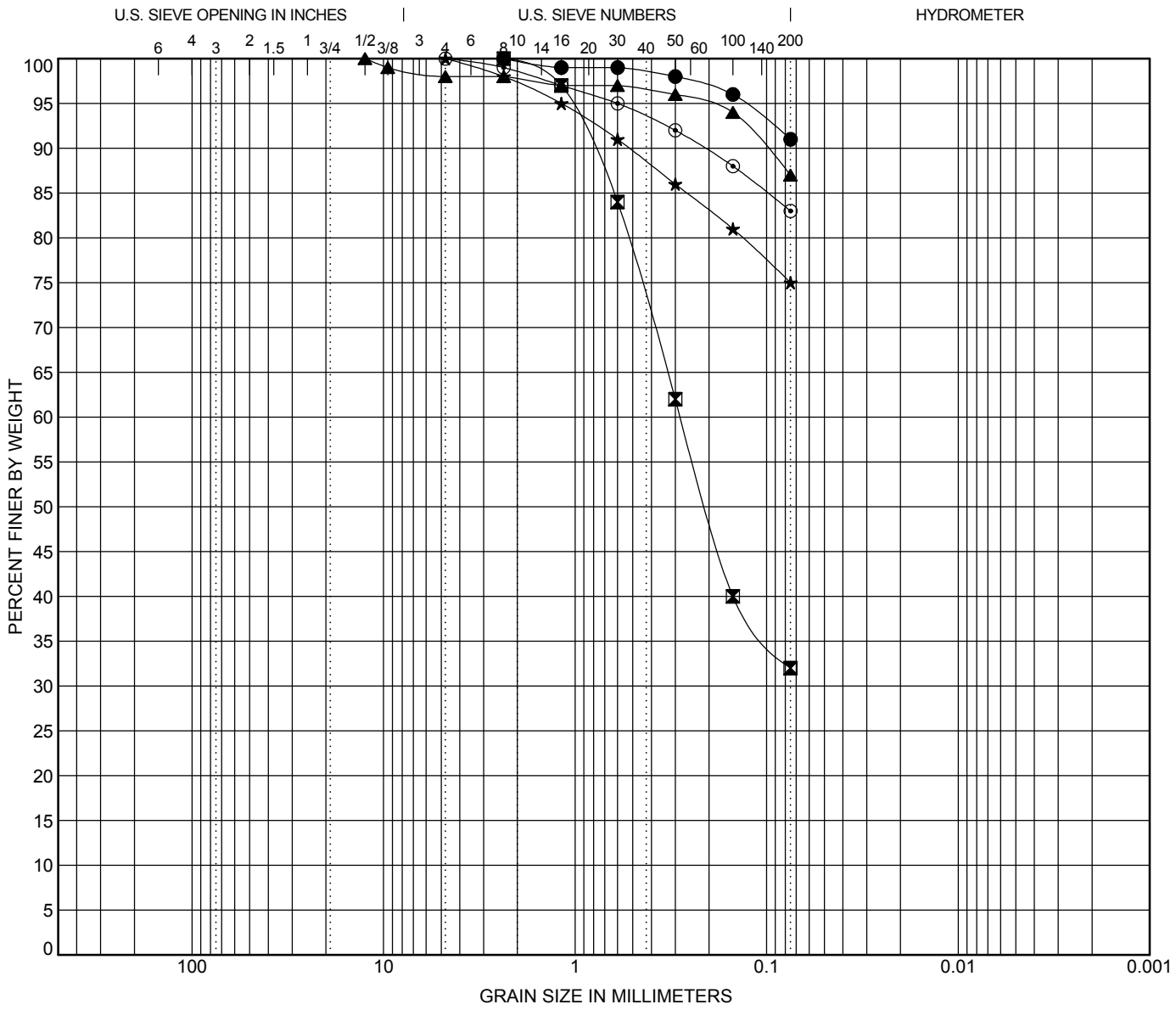
Three direct shear tests were performed on relatively undisturbed samples in soaked moisture condition in accordance with the ASTM D3080 procedure. For each test, three samples contained in brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The samples were then sheared at a constant strain rate of 0.004 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test data, including sample density and moisture content, see Drawings No. B-3 through B-5, *Direct Shear Test Results,* and the following table.

Table No. B-6, Summary of Direct Shear Test Results

Boring No.	Depth (feet)	Soil Description	Peak Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-01	7.5-9.0	Sandy Clay (CL)	25	350
BH-02	5.0-6.5	Sandy Clay (CL)	30	280
BH-04	5.0-6.5	Sandy Clay (CL)	29	330

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH-01**	**0-2.5**	**SANDY CLAY (CL)**					
⊠	**BH-01**	**12.5-18**	**SILTY SAND (SM)**					
▲	**BH-02**	**0-5**	**SANDY CLAY (CL)**					
★	**BH-03**	**0-5**	**SANDY CLAY (CL)**					
⊙	**BH-04**	**0-5**	**SANDY CLAY (CL)**					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH-01**	**0-2.5**	**2.36**				**0.0**	**9.0**	**91.0**	
⊠	**BH-01**	**12.5-18**	**2.36**	**0.282**			**0.0**	**68.0**	**32.0**	
▲	**BH-02**	**0-5**	**12.5**				**2.0**	**11.0**	**87.0**	
★	**BH-03**	**0-5**	**4.75**				**0.0**	**25.0**	**75.0**	
⊙	**BH-04**	**0-5**	**4.75**				**0.0**	**17.0**	**83.0**	

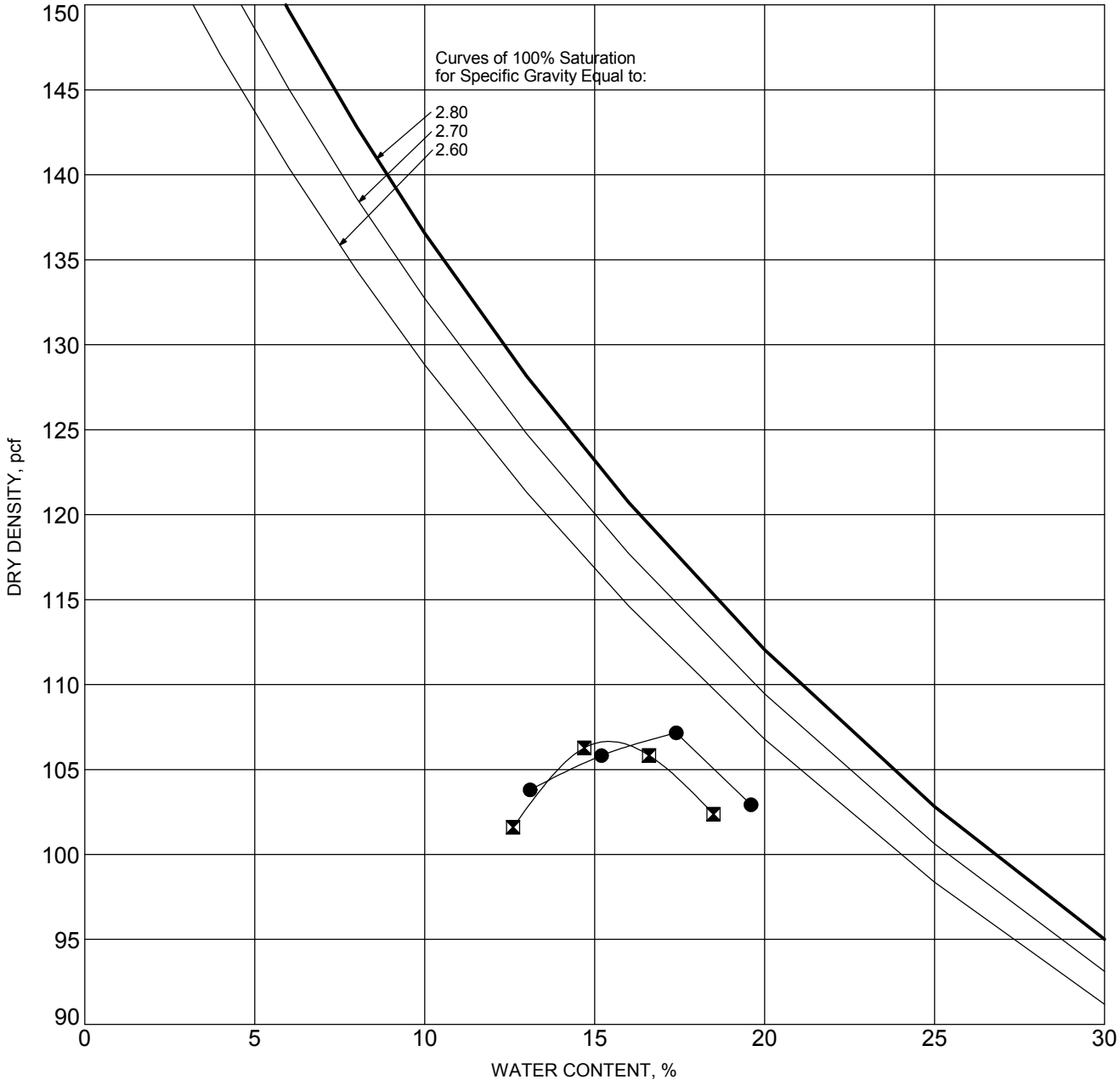
GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. **19-81-188-01**

Drawing No. **B-1**



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	**BH-02**	**0-5**	**SANDY CLAY (CL)**	**D1557-A**	**17.0**	**107.5**
⊠	**BH-04**	**0-5**	**SANDY CLAY (CL)**	**D1557-A**	**15.5**	**107.0**

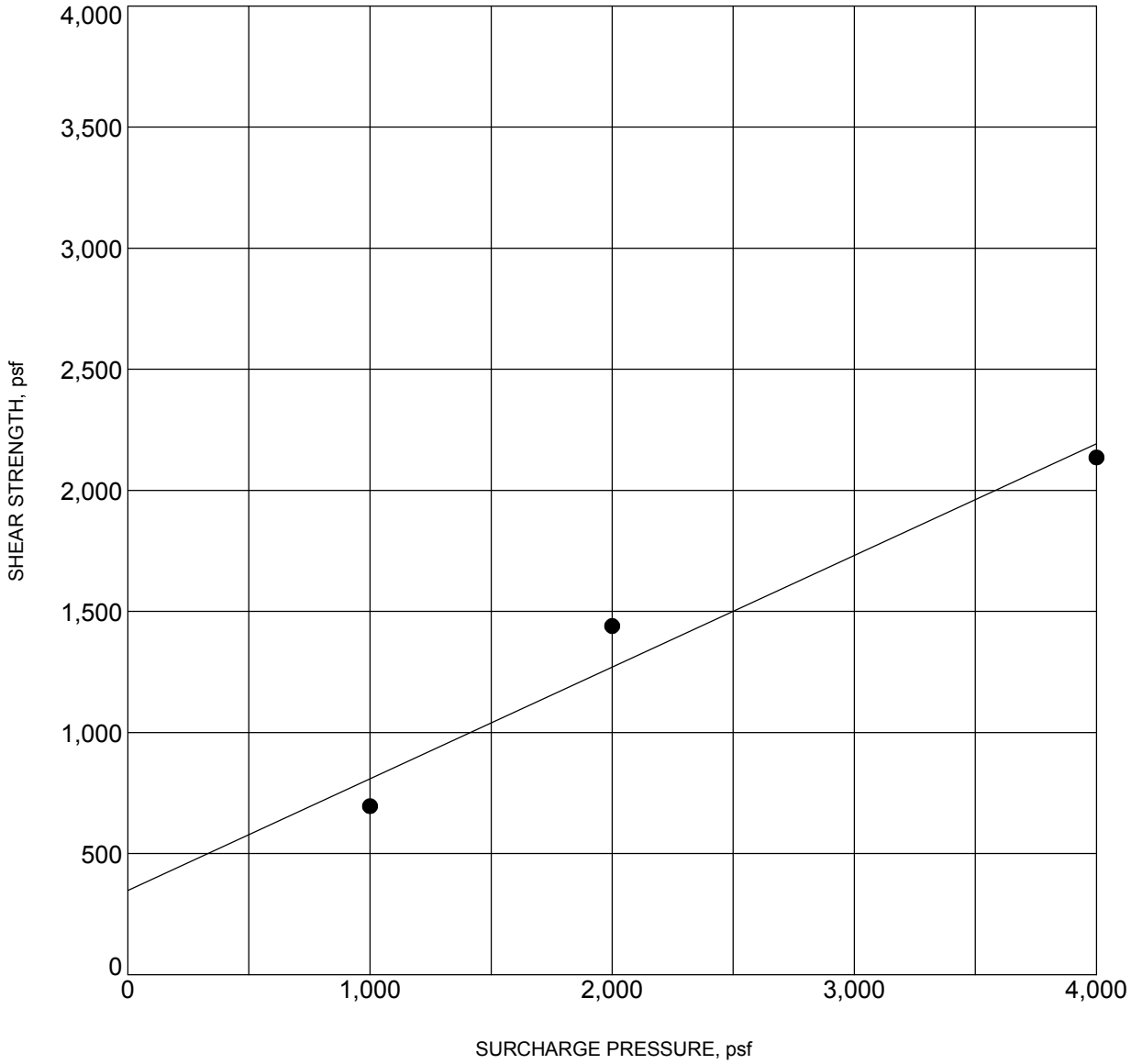
MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. **19-81-188-01**

Drawing No. **B-2**



BORING NO.	:	**BH-01**	DEPTH (ft)	:	**7.5-9.0**
DESCRIPTION	:	**SANDY CLAY (CL)**			
COHESION (psf)	:	**350**	FRICTION ANGLE (degrees):		**25**
MOISTURE CONTENT (%)	:	**26.0**	DRY DENSITY (pcf)	:	**88.0**

NOTE: Ultimate Strength.

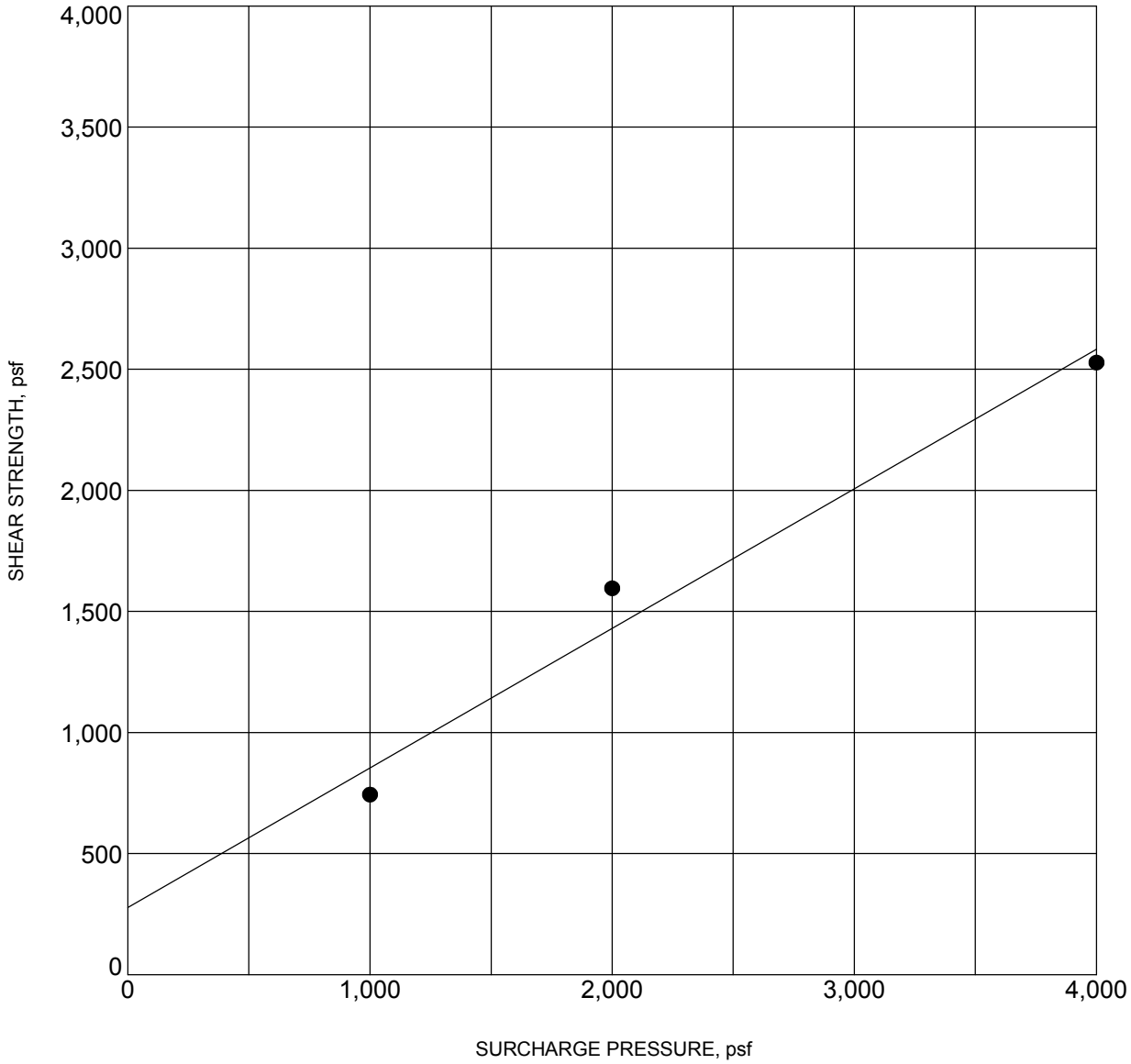
DIRECT SHEAR TEST RESULTS

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. **19-81-188-01**

Drawing No. **B-3**



BORING NO.	:	**BH-02**	DEPTH (ft)	:	**5.0-6.5**
DESCRIPTION	:	**SANDY CLAY (CL)**			
COHESION (psf)	:	**280**	FRICTION ANGLE (degrees):		**30**
MOISTURE CONTENT (%)	:	**25.0**	DRY DENSITY (pcf)	:	**91.0**

NOTE: Ultimate Strength.

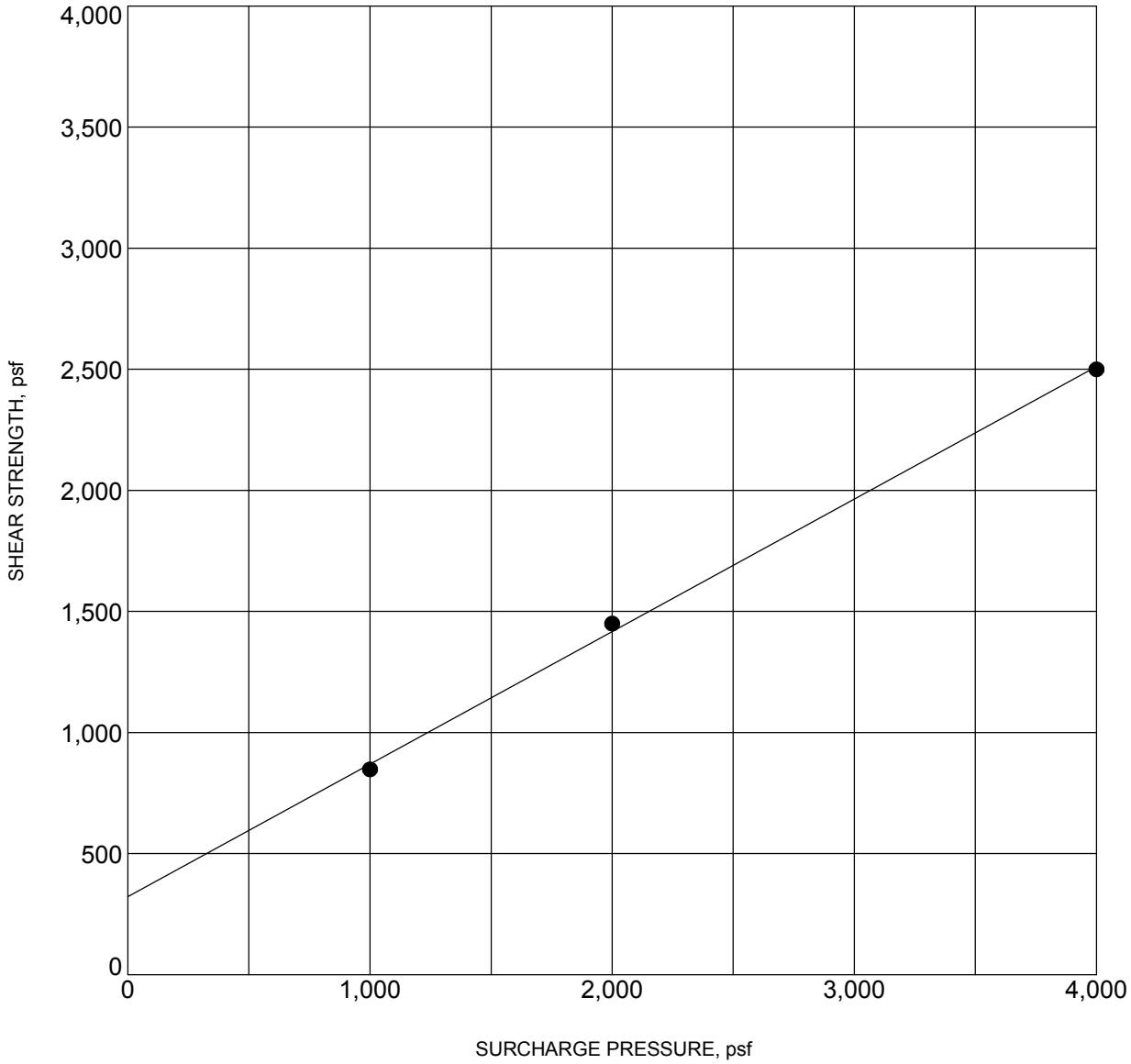
DIRECT SHEAR TEST RESULTS

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. **19-81-188-01**

Drawing No. **B-4**



BORING NO.	:	**BH-04**	DEPTH (ft)	:	**5.0-6.5**
DESCRIPTION	:	**SANDY CLAY (CL)**			
COHESION (psf)	:	**320**	FRICTION ANGLE (degrees):		**29**
MOISTURE CONTENT (%)	:	**24.0**	DRY DENSITY (pcf)	:	**75.0**

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Dunlap Road Recycled Water Pipline Replacement
Station No. 387+50.00 to 407+44.61 along Dunlap Drive
City of Perris, Riverside County, California
For: Michael Baker International, Inc.

Project No. **19-81-188-01**

Drawing No. **B-5**

Appendix G

Stephen's Kangaroo Rat Habitat Assessment

April 25, 2021

Mr. Steve Norton
Senior Biologist, Psomas
5 Hutton Centre Dr, Suite 300
Santa Ana, CA 92707

Subject: Stephens' Kangaroo Rat Habitat Assessment for the Dunlap Drive Recycled Water Pipeline Replacement Project, Riverside County, California

Dear Mr. Norton,

This letter presents the results of a habitat assessment for Stephens' kangaroo rat (SKR; *Dipodomys stephensi*) conducted along the route of the proposed Dunlap Drive Recycled Water Pipeline Replacement Project. Figure 1 shows the location of the project area east of I-215 between E. Ellis Ave and E. San Jacinto Ave. The project site is located on the Perris 7.5' USGS quadrangle (Township 4S, Range 3W, $SW^{1/4}$ and $NW^{1/4}$ of Section 34) at an approximate elevation of 1,410 feet amsl. Site photographs are found in Attachment A.

The proposed project involves replacement of a buried pipeline within an existing 30-foot utility easement. The construction would be primarily be trenching, with a jack-and-bore method in the segment along the San Jacinto River.

SKR Background

SKR is a federally Endangered species and a state Threatened species that occurs in Riverside and San Diego Counties. The natural history and habitat requirements of SKR are well known. SKR usually occur on level to gently sloping terrain, although the species has occasionally been found on relatively steep slopes. Soils in occupied habitats are typically loamy in nature, while soils dominated by clay or sand rarely contain this species. SKR typically occupy lands described as disturbed annual grassland and characterized by a relatively sparse cover of both shrubs and herbaceous vegetation. Although SKR have occasionally been found in relatively dense stands of sage scrub in Riverside County, such occurrences are by far the exception to the rule.

Methods

The habitat assessment was conducted on February 5, 2021 under mild weather conditions (65°F to 70°F, 0 miles-per-hour winds, and clear skies) by Phil Brylski, PhD, who holds state and federal permits for SKR surveys. The survey covered the length of the approximately 2,000-foot pipeline alignment, with 30-foot width right-of-way and a buffer of 50 feet of adjoining land to the east and west. Data was recorded on plant species communities; soils, slopes, and disturbance factors that could affect SKR habitat suitability, and evidence of kangaroo rat sign (burrows, tracks, dust baths, and tail-drag marks). The survey also assessed potential for other special status small mammals to occur onsite.



Figure 1. Map showing the project location and aerial photo showing the route of the recycled water pipeline.

Site Description

The pipeline route runs approximately 2,000 feet north from E. Ellis Ave to a point approximately 400 feet north of the San Jacinto River. The soils in the project alignment are predominantly Willows silty clays soils, some of which are saline and strongly saline alkaline. Riverwash soils occur along the San Jacinto River (NRCS 2021). The plant communities along the alignment are as follows:

Disturbed Alkali Sink occurs along the Ellis Avenue road edge near the southern end of the survey area. This area contains a mix of plant species, many of which are known to occur in saline or alkaline conditions. Native species include alkali weed (*Cressa truxillensis*), salt grass (*Distichlis spicata*), bush seepweed (*Suaeda nigra*), silverscale (*Atriplex argentea*), willow weed (*Persicaria lapathifolia*), and annual sunflower (*Helianthus annuus*). The vegetation is degraded (disturbed) by the presence of non-native species such as five-hook bassia (*Bassia hyssopifolia*), stinknet (*Oncosiphon pilulifer*), and red brome (*Bromus rubens*).

Ruderal vegetation occurs along the length of Dunlap Drive and along the banks/berms of the San Jacinto River (Photos 1-3). This vegetation is dominated by non-native, weedy, senescent species such as black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), and non-native grasses. Most of the remnant grass species present were not identifiable at the time of the survey; however, evidence of wheat (*Triticum aestivum*), bromes (*Bromus* spp.), and oats (*Avena* sp.) were observed.

Disturbed riverine herb occurs along the San Jacinto Riverbed. This vegetation type was dominated by alkali-mallow (*Malvella leprosa*), curly dock (*Rumex crispus*), and non-native grasses.

Fallow field cropland occurs over most of the survey area on either side of Dunlap Drive (Photos 1, 4). The area east of Dunlap Drive appears to have been tilled or disced relatively recently while the area to the west does not appear to have been actively managed as recently. Senescent, non-native grass occurs throughout the area. Species identification was not possible, but species likely present include wheat, bromes, and/or oats.

Disturbed areas consist of graded, dirt roads (e.g., Dunlap Drive). These areas are unvegetated.

Habitat Assessment

The pipeline alignment is located on ruderal, non-native grassland and disturbed habitats that can generally support SKR. However, the alignment is dominated by dense non-native grassland with some extent recently tilled agricultural lands, which are both unsuitable for SKR. The riverine herb habitats along the San Jacinto River are also mainly dense non-native grasses and unsuitable for SKR. The survey did not yield any SKR sign (potential burrows, scat, dust baths, or tail drag marks) along Dunlap Dr., or within the pipeline alignment and buffer. A live-trapping survey is not needed to confirm presence or absence of SKR.

The pipeline alignment and buffer also did not contain habitat suitable for Los Angeles pocket mouse (LAPM; *Perognathus longimembris brevinasus*). The lack of suitable substrates, presence of dense non-native grassland, and the evidence of recently tilled agricultural lands precludes the species from occurring. Please let me know if you have any questions regarding the survey results.

Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

SIGNED: _____ DATE: April 25, 2021

Phil Brylski, Ph.D.
Permitted SKR Biologist

References

NRCS (Natural Resources Conservation Service). 2020. Custom soil resource report for Western Riverside area, California. (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx).

Appendix 1. Site Photos



Photo 1. Ruderal and agricultural habitats in southern part of site



Photo 2. San Jacinto River in northern part of site



Photo 3. Dense non-native grassland in northern part of site



Photo 4. Tilled agricultural field and ruderal/non-native grassland at northern end of the site.

Appendix H

Special Status Plant Surveys

August 20, 2021

Joe Broadhead
Principal Water Resources
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, California 92572-8300

VIA EMAIL
broadhej@emwd.org

Subject: Results of Special Status Plant Surveys for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project

Dear Mr. Broadhead:

This Letter Report presents the findings of special status plant surveys conducted in 2021 for the Eastern Municipal Water District's (District's) proposed Dunlap Drive Recycled Water Pipeline Replacement Project (hereinafter referred to as the "Project"). The purpose of the surveys was to perform surveys to determine the presence/absence of special status plant species on the Project site.

PROJECT LOCATION AND DESCRIPTION

The Project involves the replacement of section of pipe for a recycled water pipeline in the City of Perris, Riverside County, California (Exhibit 1). The proposed pipeline replacement is located parallel to the existing pipeline and Dunlap Drive. The replacement pipe would measure 2,000 linear feet and would extend north from Ellis Avenue and end approximately 550 feet north of the San Jacinto River crossing. The Project site is depicted on the U.S. Geological Survey's (USGS') Perris 7.5-minute quadrangle (Exhibit 2).

The majority of the planned replacement pipeline would be 36-inches in diameter; however, the pipeline segment crossing the San Jacinto River would be increased to 48-inches in diameter allowing for a jack-and-bore installation beneath the San Jacinto River. All pipeline segments would be constructed within a 30-foot utility easement. Construction methods used to install the pipeline would primarily include an open-cut-trenching method; however, the jack-and-bore method would be used to ensure the Project avoids impacts to the San Jacinto River. The proposed pipeline minimum open cut width of 6.5 feet would be required within the existing easement.

The Project is located in the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). However, the District is not a signatory to the MSHCP Implementation Agreement. The District has the option to use the Participating Special Entity (PSE) process through the Riverside Conservation Authority.

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ENVIRONMENTAL SETTING

Topography on the Project site is relatively flat at an elevation of approximately 1,415 feet above mean sea level (msl). One drainage, the San Jacinto River, crosses the Project site. The proposed project is located on low-sloped areas mapped with clay soils known to support pooling of surface water for extended periods. Soils mapped on the Project site include riverwash; Willows silty clay; Willows silty clay, saline-alkali; Willows silty clay, deep, saline-alkali; and Willows silty clay, deep, strongly saline-alkali (Exhibit 3).

The Project site contains the following vegetation types and other areas: disturbed alkali sink, ruderal, disturbed riverine herb, active field cropland, fallow field cropland, disturbed, and developed. The surrounding land uses include active and fallow agricultural lands.

METHODS

Botanical surveys conducted by Psomas in 2021 were floristic in nature and consistent with the protocols created by the California Department of Fish and Wildlife (CDFW 2018). Prior to the field surveys, a literature search was conducted to identify special status plant species reported from the vicinity of the project site. Sources reviewed include the USGS Lake Elsinore, Perris, Romoland, and Steele Peak 7.5-minute quadrangles in the California Native Plant Society's (CNPS') Inventory of Rare and Endangered Plants (CNPS 2020) and the CDFW's California Natural Diversity Database (CNDDB) (CDFW 2020).

Rainfall received in the fall and winter determines the germination of many annual and perennial herb species. The region received approximately 3.5 inches of precipitation between May 2020 and April 2021 (data taken from Perris – Menifee – South Coast Valleys Station 240) (CIMIS 2021). The average annual precipitation in the region is 12.44 inches (data taken from Elsinore, CA US Station) (NOAA 2021).

Reference populations were monitored for annual and difficult-to-detect target species to ensure that the surveys were comprehensive (Table 1). This is especially relevant during periods of unusual rainfall patterns or below average rainfall. If conditions at a nearby reference population are suitable for germination and growth, then it can be inferred that conditions would also be suitable on the project site. Reference populations were not monitored for species with a California Rare Plant Rank (CRPR) of 3 or 4, large perennials (e.g., southern California black walnut [*Juglans californica*]) which would be identifiable throughout the year, or for species lacking a publicly accessible reference population.

TABLE 1
REFERENCE POPULATIONS MONITORED IN THE PROJECT REGION

Species	Date Population Checked	Location	Phenology
Abronia villosa ssp. *aurita* chaparral sand-verbena	April 13, 2021	Temescal Valley	blooming
Allium munzii Munz's onion	April 13, 2021	Temescal Valley	blooming
Ambrosia pumila San Diego ambrosia	June 7, 2021	North Elsinore	vegetative
Atriplex coronata var. *notatior* San Jacinto Valley crownscale	Multiple dates between March and July 2021	Intersection of Ellis Avenue and Dunlap Drive	not observed
Centromdia pungens ssp. *laevis* smooth tarplant	April 13 and June 7, 2021	San Jacinto Wildlife Area	blooming
Chorizanthe polygonoides var. *longispina* long-spined spineflower	April 13, 2021	Temescal Valley	blooming
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	April 13, 2021	San Jacinto Wildlife Area	blooming
Navarretia fossalis spreading navarretia	April 13 and June 7, 2021	San Jacinto Wildlife Area	not observed

The botanical survey area included the potential direct impact area associated with the proposed project, including the existing 30-foot project easement, the proposed jacking pit, and the proposed receiving pit, collectively referred to as the "project boundary". Surveys were conducted by Psomas Senior Biologist Allison Rudalevige on April 20, June 7, and July 6, 2021. The total number of person-hours spent surveying was 2 hours.

A systematic survey was conducted by walking meandering transects through the Project site. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for later identification. Plants were identified using taxonomic keys, descriptions, and illustrations in Jepson Flora Project (2020) and Baldwin et al. (2012) to the taxonomic level necessary to determine whether they are a special status species. Nomenclature of plant taxa conform to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021) for special status species and the Jepson eFlora (Jepson Flora Project 2020) for all other taxa. A list of all plant species observed during special status plant surveys is included in Attachment A.

SURVEY RESULTS

Table 1 identifies the special status plants reported from the literature review with their status, their potential to occur on the Project site, and the survey results. No special status plant species were observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Abronia villosa var. aurita chaparral sand-verbena	—	—	1B.1	Annual herb found in sandy soil of chaparral, coastal scrub, and desert dunes at elevations between 245 and 5,250 feet above msl. Blooming period: March – September (uncommonly as early as January)	Reported approximately 3.5 miles north of the Project site (CCH 2021).	Not expected to occur. Marginal suitable habitat (reported upstream of Project site in San Jacinto River) but not observed during focused surveys.
Allium munzii Munz's onion	FE	ST	1B.1	Perennial bulbiferous herb found in mesic, clay soil of chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland at elevations between 975 and 3,510 feet above msl. Blooming period: March – May.	Reported approximately 8 miles southwest of the Project site (CCH 2021).	Not expected to occur. Marginal suitable habitat but at edge of current known range and not observed during focused surveys.
Ambrosia pumila San Diego ambrosia	FE	—	1B.1	Perennial rhizomatous herb found in sandy loam or clay soils (sometimes alkaline) of chaparral, coastal scrub, valley and foothill grassland, vernal pools, and often disturbed areas at elevations between 65 and 1,360 feet above msl. Blooming period: April – October.	Reported approximately 6.5 miles west of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but at edge of current known range and not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Atriplex coronata var. notatior San Jacinto Valley crownscale	FE	—	1B.1	Annual herb found in alkaline soils (including Willows soils) of playas, mesic valley and foothill grassland, and vernal pools at elevations between 455 and 1,640 feet above msl. Blooming period: April – August.	Reported from the Project site (i.e., the northwest corner of Ellis Avenue and Dunlap Drive) in 2005 and at multiple locations along the San Jacinto River (CCH 2021).	May occur in the future. Suitable habitat and previously reported from Project site. Not observed during focused surveys.
Atriplex pacifica South Coast saltscale	—	—	1B.2	Annual herb found in coastal bluff scrub, coastal dunes, coastal scrub, and playas (including Willows soils) at elevations between sea level and 460 feet above msl (note: most locations occur along the coast but it has been reported at higher elevations in the Project vicinity). Blooming period: March – October.	Reported approximately 4.5 miles northeast of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Atriplex parishii Parish's brittlescale	—	—	1B.1	Annual herb found in alkaline soils of chenopod scrub, playas, and vernal pools at elevations between 80 and 6,235 feet above msl. Blooming period: June – October.	Reported approximately 5.5 miles northeast of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Atriplex serenana var. *davidsonii* Davidson's saltscale	—	—	1B.2	Annual herb found in alkaline soils of coastal bluff scrub, coastal scrub, and flats at elevations between 35 and 655 feet above msl (note: many locations occur along the coast but it has been reported at higher elevations in the Project vicinity). Blooming period: April – October.	Reported approximately 1 mile northeast of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Brodiaea filifolia thread-leaved brodiaea	FT	SE	1B.1	Perennial bulbiferous herb found in chaparral openings, cismontane woodland, coastal scrub, playas, valley and foothill grasslands, and vernal pools, often in clay soils (including Willows soils), and at elevations between 80 and 3,675 feet above msl. Blooming period: March – June.	Historically reported approximately 0.3 mile east of the Project site (1952 record) with more recent observations approximately 1 mile northeast of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Calochortus plummerae Plummer's mariposa-lily	—	—	4.2	Perennial bulbiferous herb found in granitic or rocky soil of chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland at elevations between 330 and 5,580 feet above msl. Blooming Period: May – July.	Reported approximately7.5 miles east of the Project site (CCH 2021).	Not expected to occur. No suitable habitat and not observed during focused surveys.
Carex buxbaumii Buxbaum's sedge	—	—	4.2	Perennial rhizomatous herb found in bogs and fens, mesic meadows and seeps, marshes, and swamps at elevations between 10 and 10,825 feet above msl. Blooming period: March – August.	Reported from the central coast, Sierra Nevada, and Klamath Ranges (CCH 2021); occurrence on Lake Elsinore quadrangle unconfirmed.	Not expected to occur. Outside current known range and not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Caulanthus simulans Payson's jewelflower	—	—	4.2	Annual herb found in sandy and granitic soils of chaparral and coastal scrub at elevations between 295 and 7,220 feet above msl. Blooming period: March – May (occasionally from February to June).	Reported approximately 8.5 miles west of the Project site (CCH 2021).	Not expected to occur. No suitable habitat and not observed during focused surveys.
Centromadia pungens ssp. *laevis* smooth tarplant	—	—	1B.1	Annual herb found in alkaline soils of chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland at elevations between sea level and 2,100 feet above msl. Blooming period: April – September.	Reported from multiple locations within 1 mile of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Chorizanthe leptotheca Peninsular spineflower	—	—	4.2	Annual herb found in granitic soil and alluvial fans of chaparral, coastal scrub, and lower montane coniferous forest at elevations between 985 and 6,235 feet above msl. Blooming period: May – August.	Historically reported approximately 6.3 miles south of the Project site (CCH 2021; 1893 record).	Not expected to occur. No suitable habitat and not observed during focused surveys.
Chorizanthe parryi var. *parryi* Parry's spineflower	—	—	1B.1	Annual herb found in sandy or rocky openings of chaparral, cismontane woodland, coastal sage scrub, and valley and foothill grasslands at elevations between 900 and 4,005 feet above msl; Blooming Period: April – June.	Reported approximately 3 miles southwest of the Project site (CCH 2021).	Not expected to occur. No suitable habitat and not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Chorizanthe polygonoides var. *longispina* long-spined spineflower	—	—	1B.2	Annual herb often found in clay soils of chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools at elevations between 100 and 5,020 feet above msl. Blooming period: April – July.	Reported approximately 4.8 miles southeast of the Project site (CCH 2021).	Not expected to occur. Marginally suitable habitat but not observed during focused surveys.
Convolvulus simulans small-flowered morning-glory	—	—	4.2	Annual herb found in clay, serpentinite seeps of chaparral openings, coastal scrub, and valley and foothill grassland at elevations between 100 and 2,430 feet above msl. Blooming period: March – July.	Reported approximately 2.7 miles southwest of the Project site (CCH 2021).	Not expected to occur. Marginally suitable habitat but not observed during focused surveys.
Deinandra paniculata paniculate tarplant	—	—	4.2	Annual herb found in coastal scrub, valley and foothill grassland, and vernal pools, usually in vernally mesic or sandy soil at elevations between 80 and 3,085 feet above msl. Blooming Period: April – November (occasionally in March).	Reported approximately 2 miles south of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Dodecahema leptoceras slender-horned spineflower	FE	SE	1B.1	Annual herb found in sandy soils of chaparral, cismontane woodland, and coastal scrub (alluvial fans) at elevations between 655 and 2,495 feet above msl. Blooming period: April – June.	Reported approximately 11.7 miles southwest of the Project site (CCH 2021).	Not expected to occur. No suitable habitat and not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Dudleya multicaulis many-stemmed dudleya	—	—	1B.2	Perennial herb found in chaparral, coastal scrub, and valley and foothill grassland, often on clay soil at elevations between 50 and 2,590 feet above msl. Blooming period: April – July.	Reported approximately 11.7 miles west of the Project site (CCH 2021).	Not expected to occur. No suitable habitat, outside current known range, and not observed during focused surveys.
Harpagonella palmeri Palmer's grapplinghook	—	—	4.2	Annual herb found in clay, open grassy areas within shrubland (i.e., chaparral, coastal scrub, and valley and foothill grassland) at elevations between 65 and 3,135 feet above msl. Blooming period: March – May.	Reported approximately 3 miles southwest of the Project site (CCH 2021).	Not expected to occur. No suitable habitat, at edge of current known range, and not observed during focused surveys.
Hordeum intercedens vernal barley	—	—	3.2	Annual herb found in coastal dunes, coastal scrub, valley and foothill grassland (depressions, saline flats), and vernal pools at elevations between 15 and 3,280 feet above msl. Blooming period: March – June.	Reported approximately 1 mile west of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Juglans californica Southern California black walnut	—	—	4.2	Perennial deciduous tree found in chaparral, cismontane woodland, coastal scrub, riparian woodland, and alluvial areas at elevations between 165 and 2,955 feet above msl. Blooming period: March – August.	Reported approximately 8 miles south of the Project site (CCH 2021).	Not expected to occur. Large tree that would have been observed during focused surveys, if present.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	—	—	1B.1	Annual herb found in coastal salt marshes and swamps, playas, and vernal pools at elevations between 5 and 4,005 feet above msl. Blooming period: February – June.	Reported approximately 1 mile southwest of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Lepechinia cardiophylla heart-leaved pitcher sage	—	—	1B.2	Perennial shrub found in closed-cone coniferous forest, chaparral, and cismontane woodland at elevations between 1,705 and 4,495 above msl. Blooming period: April – July.	Reported approximately 16 miles west of the Project site (CCH 2021).	Not expected to occur. No suitable habitat, outside current known range, and not observed during focused surveys.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	—	—	4.3	Annual herb found in chaparral and coastal scrub at elevations between 5 and 2,905 feet above msl. Blooming period: January – July.	Reported approximately 4.5 miles south of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Microseris douglasii ssp. *platycarpha* small-flowered microseris	—	—	4.2	Annual herb found in clay soil of cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools at elevations between 50 and 3,510 feet above msl. Blooming period: March – May.	Reported approximately 1 mile west of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Myosurus minimus ssp. *apus* little mousetail	—	—	3.1	Annual herb found in valley and foothill grassland and alkaline vernal pools at elevations between 65 and 2,100 feet above msl. Blooming period: March – Jun.	Reported approximately 5.8 miles south of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Nama stenocarpa mud nama	—	—	2B.2	Annual/perennial herb found in marshes and swamps of lake margins and riverbanks at elevations between 15 and 1,640 feet above msl. Blooming period: January – July.	Historically reported approximately 0.6 mile west of the Project site (CCH 2021; 1952 record). Currently known only from the shores of Mystic Lake in Riverside County (Roberts et al. 2004).	Not expected to occur. Suitable habitat but outside current known range and not observed during focused surveys.
Navarretia fossalis spreading navarretia	FT	—	1B.1	Annual herb found in chenopod scrub, shallow freshwater marshes and swamps, playas, and vernal pools at elevations between 100 and 2,150 feet above msl. Blooming period: April – June.	Reported less than 400 feet east of the Project site (CCH 2021).	May occur in the future. Suitable habitat and previously reported adjacent to Project site. Not observed during focused surveys.
Orcuttia californica California Orcutt grass	FE	SE	1B.1	Annual herb found in vernal pools at elevations between 50 and 2,165 feet above msl. Blooming period: April – August.	Reported approximately 8.7 miles southeast of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Romneya coulteri Coulter's matilija poppy	—	—	4.2	Perennial rhizomatous herb found in chaparral and coastal scrub, often in burns, at elevations between 65 and 3,935 feet above msl. Blooming period: March – July (occasionally in August).	Reported approximately 9.2 miles west of the Project site (CCH 2021).	Not expected to occur. No suitable habitat, outside current known range, and not observed during focused surveys.
Texosporium sancti-jacobi woven-spored lichen	—	—	3	Terricolous crustose lichen found on soil, small mammal pellets, dead twigs, and on *Selaginella* species in chaparral openings at elevations between 195 and 2,165 feet above msl.	Reported approximately 9.7 miles west of the Project site (CDFW 2021).	Not expected to occur. No suitable habitat and not observed during focused surveys.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Tortula californica California screw-moss	—	—	1B.2	Moss found in sandy soil of chenopod scrub and valley and foothill grassland at elevations between 35 and 4,790 feet above msl.	Reported approximately 4 miles east of the Project site (CDFW 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.
Trichocoronis wrightii var. *wrightii* Wright's trichocoronis	—	—	2B.1	Annual herb found in alkaline soils (including Willows soils) of meadows and seeps, marshes and swamps, riparian forest, and vernal pools at elevations between 15 and 1,425 feet above msl. Blooming period: May – September.	Reported approximately 5 miles northeast of the Project site (CCH 2021).	Not expected to occur. Suitable habitat but not observed during focused surveys.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank; msl: mean sea level.

* Source: CNPS 2021

LEGEND:

Federal (USFWS)

FE Endangered
FT Threatened

State (CDFW)

SE Endangered
ST Threatened

CRPR

1B Plants Rare, Threatened, or Endangered in California and elsewhere
2B Plants Rare, Threatened, or Endangered in California but more common elsewhere
3 Plants about which we need more information – A Review List
4 Plants of limited distribution – A Watch List

CRPR Threat Code Extensions

None Plants lacking any threat information
.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 Fairly threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

CONCLUSIONS

As noted above, no special status plant species were observed on the Project site during 2021 special status plant surveys. Regional rainfall amounts and reference populations were monitored to ensure the scientific adequacy of these surveys and multiple survey visits occurred during species' blooming periods. These efforts help determine which plant species may not be detectable at the time of the survey and, subsequently, may still occur onsite. San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) and spreading navarretia (*Navarretia fossalis*) were not observed during 2021 reference population checks. Therefore, the negative survey results cannot reliably be attributed to absence of the species on that Project site. They have been reported from multiple locations along the San Jacinto River and surrounding areas, including in the immediate vicinity of the Project site in 2005 and 1993, respectively (CCH 2021). Given that these species are annual herbs whose germination may be affected by seasonal rainfall and the potential for a seed bank to occur on the Project site, there is potential for these species to grow on the Project site in the future under more normal conditions.

If you have any comments or questions, please contact Steve Norton at Steve.norton@psomas.com or 714.481.8037.

Sincerely,
PSOMAS

Steve Norton
Project Manager

Allison D. Rudalevige
Senior Biologist

Enclosures: Exhibit 1 – Project Location
Exhibit 2 – USGS 7.5-Minute Digital Quadrangle
Exhibit 3 – Soil Types
Attachment A – Plant Compendium

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Aerial Source: Esri, Maxar 2019

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Project Location

Exhibit 1

Dunlap Drive Recycled Water Pipeline Replacement Project

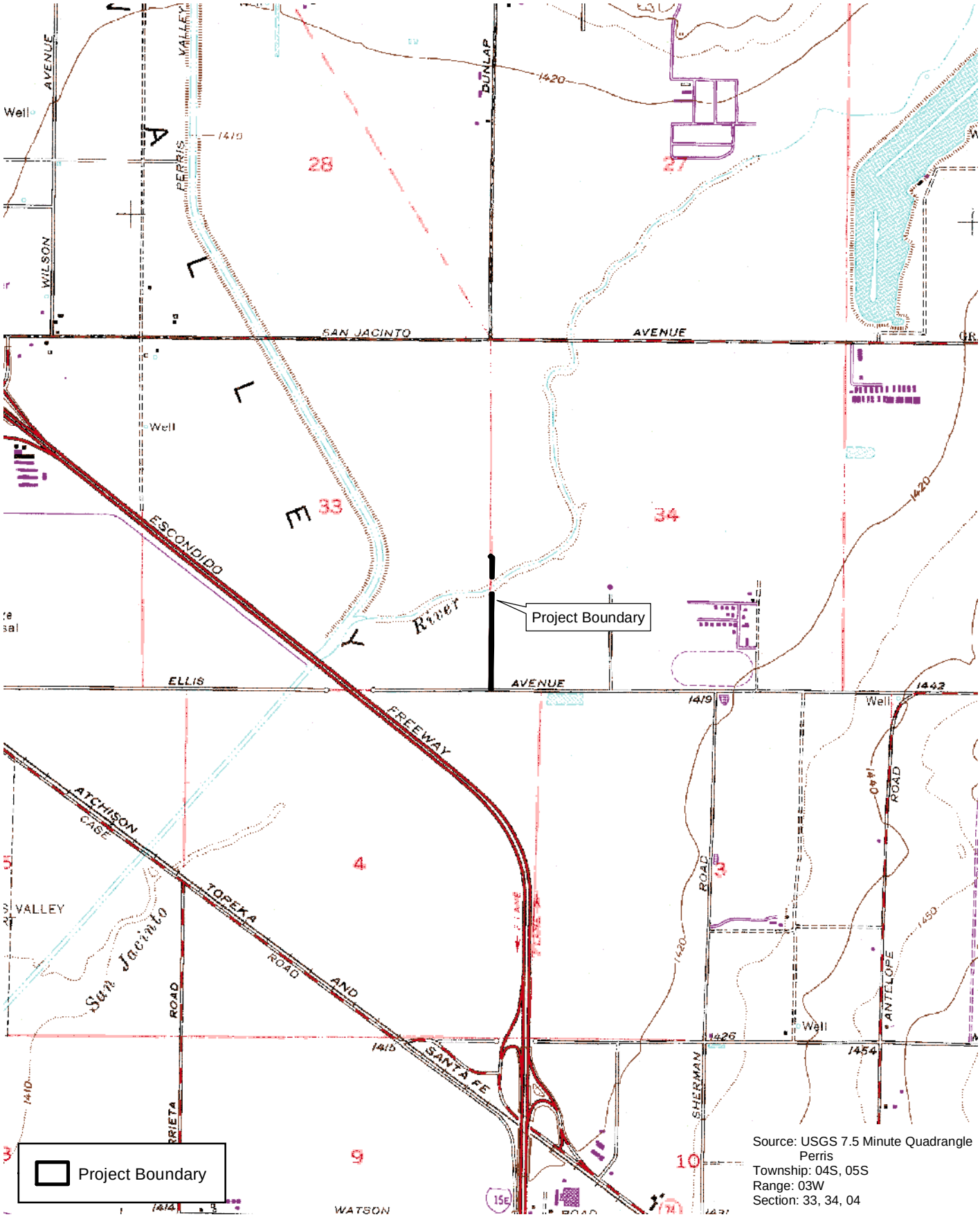
N W E S

700 350 0 700

Feet

PSOMAS

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USGS 7.5-Minute Digital Quadrangle

Exhibit 2

Dunlap Drive Recycled Water Pipeline Replacement Project

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

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Data Source: U.S. Department of Agriculture; Natural Resources Conservation Service
Aerial Source: Esri, Maxar 2019

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Soil Types

Exhibit 3

Dunlap Drive Recycled Water Pipeline Replacement Project

N W E S

300 150 0 300

Feet

PSOMAS

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ATTACHMENT A

PLANT COMPENDIUM

PLANT SPECIES OBSERVED DURING SPECIAL STATUS PLANT SURVEYS

Species	
Scientific Name	**Common Name**
EUDICOTS	
AMARANTHACEAE – AMARANTH FAMILY	
*Amaranthus albus**	tumbleweed
ASTERACEAE – SUNFLOWER FAMILY	
Deinandra fasciculata	fascicled tarplant
*Erigeron bonariensis**	flax-leaved horseweed
*Glebionis coronaria**	crown daisy
Helianthus annuus	annual sunflower
*Lactuca serriola**	prickly lettuce
Lasthenia gracilis	common goldfields
*Matricaria discoidea**	pineapple weed
*Oncosiphon piluliferum**	stinknet
BORAGINACEAE – BORAGE FAMILY	
Heliotropium curassavicum var. oculatum	alkali heliotrope
BRASSICACEAE – MUSTARD FAMILY	
*Brassica nigra**	black mustard
*Sisymbrium irio**	London rocket
CARYOPHYLLACEAE – PINK FAMILY	
*Spergularia bocconi**	Boccone's sand-spurrey
CHENOPODIACEAE – GOOSEFOOT FAMILY	
Atriplex argentea var. expansa	expanded silverscale
Atriplex lentiformis	big saltbush
*Atriplex suberecta**	sprawling saltbush
*Bassia hyssopifolia**	hyssop-leaved bassia
*Salsola tragus**	Russian thistle
Suaeda nigra	bush seepweed
CONVOLVULACEAE – MORNING–GLORY FAMILY	
*Convolvulus arvensis**	bindweed
Cressa truxillensis	alkali weed
FABACEAE – LEGUME FAMILY	
*Medicago sativa**	alfalfa
GERANIACEAE – GERANIUM FAMILY	
*Erodium cicutarium**	redstem filaree
MALVACEAE – MALLOW FAMILY	
*Malva parviflora**	cheeseweed
Malvella leprosa	alkali-mallow
PLANTAGINACEAE – PLANTAIN FAMILY	
*Plantago lanceolata**	English plantain
POLYGONACEAE – BUCKWHEAT FAMILY	
*Polygonum aviculare**	knotweed
*Rumex crispus**	curly dock
Rumex fueginus	golden dock
Rumex hymenosepalus	canaigre

PLANT SPECIES OBSERVED DURING SPECIAL STATUS PLANT SURVEYS

Species	
Scientific Name	**Common Name**
TAMARICACEAE – TAMARISK FAMILY	
*Tamarix ramosissima**	saltcedar
MONOCOTS	
CYPERACEAE – SEDGE FAMILY	
Eleocharis sp.	spikerush
POACEAE – GRASS FAMILY	
*Avena fatua**	wild oat
*Bromus diandrus**	ripgut grass
*Bromus rubens**	red brome
Distichlis spicata	salt grass
*Festuca perennis**	rye grass
*Hordeum murinum**	wall barley
*Phalaris sp.**	canary grass
*Polypogon monspeliensis**	annual beard grass
*Triticum aestivum**	Wheat
* Non-native or invasive species	

Appendix I

Dry Season Vernal Pool Branchiopods

MEMORANDUM

July 9, 2021

To:
Joe Broadhead
Eastern Municipal Water District

From:
Steve Norton
Allison D. Rudalevige
Psomas

Subject: Dry Season Survey Results for Vernal Pool Branchiopods Conducted for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project in Riverside County, California

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This memo summarizes dry season soil collection activities and cyst identification results conducted for vernal pool branchiopods (i.e., fairy shrimp) for the Eastern Municipal Water District's Dunlap Drive Recycled Water Pipeline Replacement Project (hereinafter referred to as the "Project") located in the City of Perris, Riverside County, California (Exhibit 1). The project involves the replacement of a section of pipe for a recycled water pipeline. The proposed pipeline replacement is located parallel to the existing pipeline and Dunlap Drive. The replacement pipe would measure 2,000 linear feet and would extend north from Ellis Avenue and end approximately 550 feet north of the San Jacinto River crossing. The site is on the U.S. Geological Survey's (USGS) Perris 7.5-minute quadrangle at Township 04 South, Range 03 West, and Sections 33 and 34 of the San Bernardino Base and Meridian (SBBM) (Exhibit 2).

Soil sampling was conducted in accordance with the U.S. Fish and Wildlife Service's (USFWS') *Survey Guidelines for the Listed Large Branchiopods*.[1] USFWS approval to initiate surveys was provided on December 17, 2020. Soil samples were collected on December 21, 2020, by Psomas Senior Biologist Allison Rudalevige (TE No. 177979-2), whose permit authorizes collection of an unquantified number of fairy shrimp cysts contained within soil samples pursuant to Special Term and Condition 7.d of the permit noted above.

The sampling area for vernal pool branchiopods was assessed during a general survey for the Project.[2] Potentially ponding areas within the project boundary were identified as depressional features exhibiting cracked soil (i.e., cracks formed by drying of fine-grained sediment). A total of five features providing potential suitable habitat for fairy shrimp were identified within or partially within the Project boundary (Exhibit 3).

Attachment A provides representative photographs of the five sampled features; soil collection locations are demarcated with white pin flags. The number of soil samples collected was based upon the feature size (i.e., the outer extent of cracked soil and concave microtopography). Between 50 and 100 milliliters of soil was collected from each of the sampling points. Soils were dry at the time of sampling. A hand spade was used to carefully lift soil from the top 1 to 3 centimeters of the soil surface. Care was taken to leave the soil in clumps to protect cysts that might be present. Soil was placed in a ziptop plastic bag, which was labeled and sealed. Soil samples were shipped to Helm Biological Consulting for analysis and culturing, if necessary. *Branchinecta* sp. cysts were observed in the soil samples for all five features (Table 1). Cysts were hatched and reared for identification to species. It was determined that all species

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1 U.S. Fish and Wildlife Service. 2017 (November 7). *Survey Guidelines for the Listed Large Branchiopods*. Sacramento, CA: USFWS.

2 Psomas. 2020 (October 22). *Biological Resources Assessment for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project*. Santa Ana, CA: Psomas.

were versatile fairy shrimp (*Branchinecta lindahli*). Detailed cyst analysis and culturing methods and results are presented in Attachment B.

TABLE 1
RESULTS OF SOIL ANALYSIS

Feature	Size (square meters)	Number of Samples Collected	Cysts Present	Fairy Shrimp Identified*
1	215	25	Yes	*Branchinecta lindahli*
2	24	10	Yes	*Branchinecta lindahli*
3	10	10	Yes	*Branchinecta lindahli*
4	98	25	Yes	*Branchinecta lindahli*
5	165	25	Yes	*Branchinecta lindahli*
* Based on results of cyst processing (Attachment B).				

Pursuant to USFWS protocol, a complete survey consists of one wet season survey and one dry season survey and absence of listed species cannot be assumed based on hydration and incubation of cysts. Wet season surveys were initiated in December 2020 following inundation. Wet season survey results will be provided in a separate report upon completion of surveys.

If you have any questions regarding the content of this memo, please contact Steve Norton or Allison Rudalevige at (714) 751-7373.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Allison D. Rudalevige (TE No. 177979-2)
Senior Biologist

Enclosures: Exhibits 1–3
Attachment A – Representative Photographs
Attachment B – Helm Biological Consulting Report

cc: Stacey Love, USFWS
Justin Garcia, CDFW

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Aerial Source: Esri, Maxar 2019

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Project Location

Exhibit 1

Dunlap Recycled Water Pipeline Project

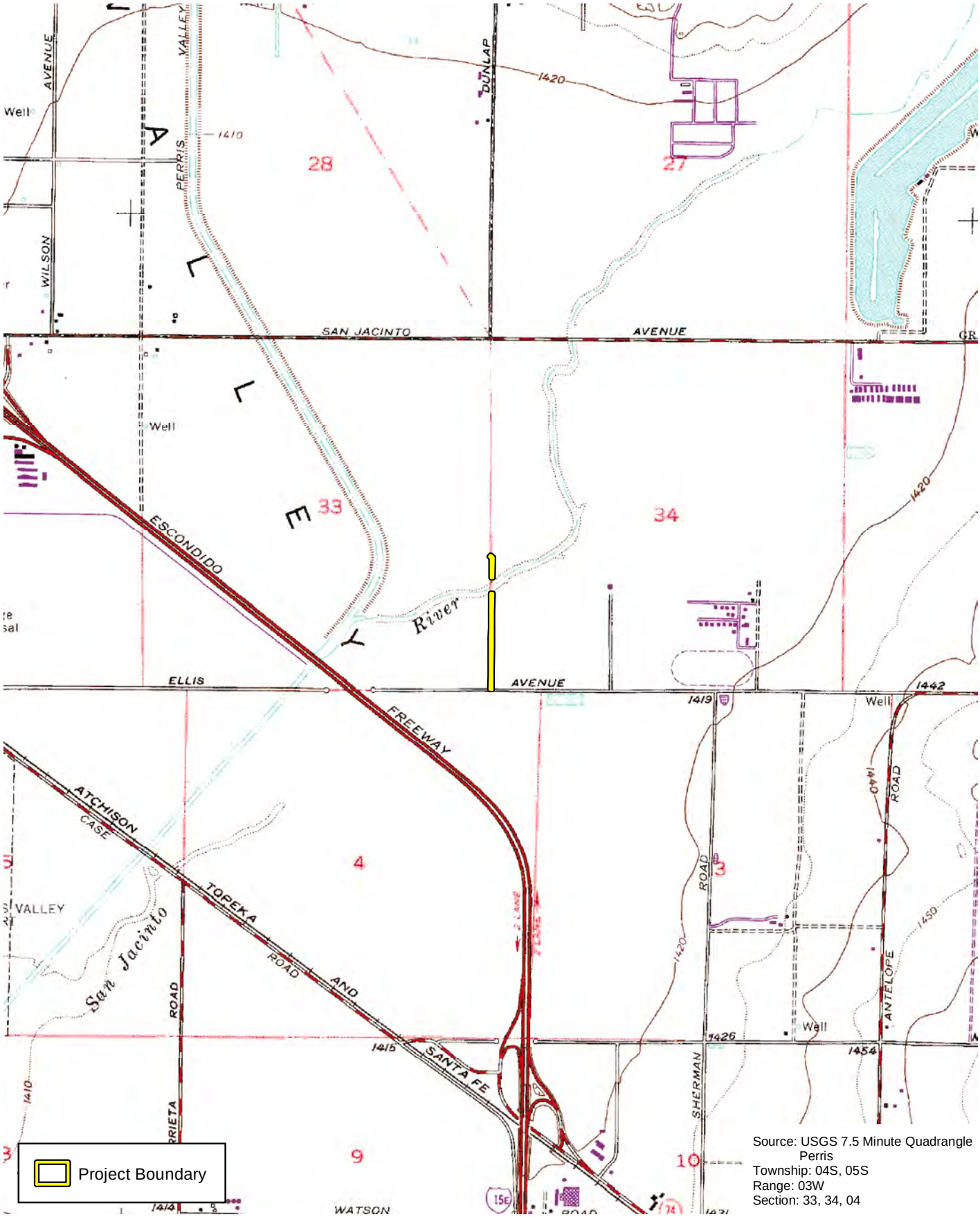
N W E S

700 350 0 700

Feet

PSOMAS

(Rev: 12/10/2020 MMD) R:\Projects\EAS\3EAS020103\Graphics\FShrimp\ex_Project_Location.pdf



Source: USGS 7.5 Minute Quadrangle
Perris
Township: 04S, 05S
Range: 03W
Section: 33, 34, 04

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USGS 7.5-Minute Digital Quadrangle

Exhibit 2

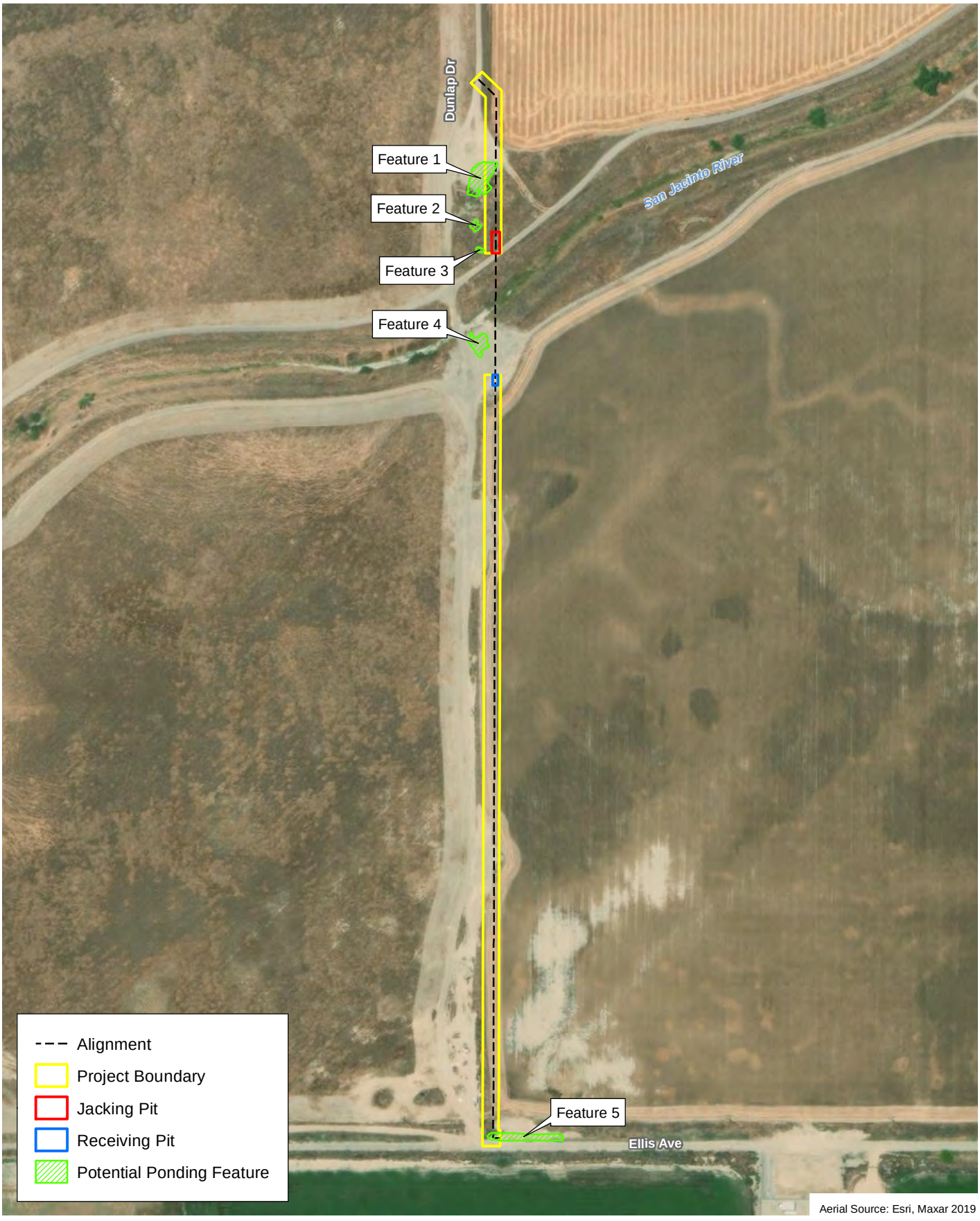
Dunlap Recycled Water Pipeline Project

N
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2,000 1,000 0 2,000
Feet

PSOMAS

(Rev: 12/10/2020 MMD) R:\Projects\EAS\3EAS020103\Graphics\FShrimp\ex_USGS.pdf



Aerial Source: Esri, Maxar 2019

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Fairy Shrimp Sampling Locations

Exhibit 3

Dunlap Recycled Water Pipeline Project

N W E S

250 125 0 250

Feet

PSOMAS

(Rev: 01/12/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\FShrimp\ex_FShrimp.pdf

ATTACHMENT A

REPRESENTATIVE PHOTOGRAPHS



December 21, 2020. Dry season sampling of Feature 1.



December 21, 2020. Dry season sampling of Feature 2.

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Representative Photographs

Attachment A-1

Dunlap Recycled Water Pipeline Project

PSOMAS

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December 21, 2020. Dry season sampling of Feature 3.



December 21, 2020. Dry season sampling of Feature 4.

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Representative Photographs

Attachment A-2

Dunlap Recycled Water Pipeline Project

PSOMAS

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December 21, 2020. Dry season sampling of Feature 5.

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Representative Photographs

Attachment A-3

Dunlap Recycled Water Pipeline Project

PSOMAS

(01/12/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\FShrimp\Att_Photographs_DRY.pdf

ATTACHMENT B

HELM BIOLOGICAL CONSULTING REPORT

DRY SOIL ANALYSIS AND CYST CULTURING FOR THE DETECTION OF FEDERALLY LISTED LARGE BRANCHIOPODS AT THE EASTERN MUNICIPAL WATER DISTRICT DUNLAP DRIVE RECYCLED WATER PIPELINE REPLACEMENT PROJECT, RIVERSIDE COUNTY, CALIFORNIA



Prepared for:

PSOMAS

PSOMAS
3 Hutton Centre Drive, Suite 200
Santa Ana, CA 92807
Contact: **Allison Rudalevige**
(714) 481-8024

Prepared by:

HELM BIOLOGICAL CONSULTING
A Tansley Team Division
4600 Karchner Rd, Sheridan, CA 95681

HELM BIOLOGICAL CONSULTING
4600 Karchner Road
Sheridan, CA 95681
***Contact*: Dr. Brent Helm**
(530) 633-0220

April 2021

HELM
BIOLOGICAL CONSULTING
A Tansley Team Division
4600 Karchner Rd, Sheridan, CA 95681

DRY SOIL ANALYSIS AND CYST CULTURING FOR THE DETECTION OF FEDERALLY LISTED LARGE BRANCHIOPODS AT THE EASTERN MUNICIPAL WATER DISTRICT DUNLAP DRIVE RECYCLED WATER PIPELINE REPLACEMENT PROJECT, RIVERSIDE COUNTY, CALIFORNIA

INTRODUCTION

Helm Biological Consulting (HBC), a division of Tansley Team, Inc., was contracted by Psomas to perform an analysis of soils collected from dry seasonally inundated depressions (hereafter "features") at the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project (hereafter "Project"), for the presence of large branchiopods (fairy shrimp, tadpole shrimp) that are listed as threatened or endangered under the federal Endangered Species Act (e.g., the threatened vernal pool fairy shrimp [*Branchinecta lynchi*], the endangered Riverside fairy shrimp [*Streptocephalus woottoni*]). In addition, HBC was contracted by Psomas to culture large branchiopod cysts (hatch cysts and rear hatchlings to maturity for positive identification of species) obtained from the soil analysis.

The Project involves the replacement of a section of pipe for a recycled water pipeline located in the City of Perris and unincorporated Riverside County, California (Exhibit 1). The proposed pipeline replacement is located parallel to the existing pipeline and Dunlap Drive. The replacement pipe would measure 2,000 linear feet and would extend north from Ellis Avenue and end approximately 550 feet north of the San Jacinto River crossing. Additionally, the Project is located in Sections 4, 33, and 34, Township 4 and 5 South, Range 3 West, and San Bernardino Base & Meridian of the Perris U.S. Geological Survey 7.5-minute quadrangle map. The Project's approximate center coordinates (Exhibit 2) (World Geodetic System 1984 [WGS84]) are: 33.774281°, -117.191213°.

The remainder of this report discusses the methods and results of the soil examinations and cyst culturing to determine the presence of federally listed large branchiopods at the Project.

"We certify that the information in this survey report and attached exhibits fully and accurately represents our work."

Brent P. Helm Signature _____ Date 04-13-2021
(TE-795930-10.2)

Sean M. O'Brien Signature _____ Date 04-13-2021
(TE-795930-10.2)

METHODS

Methods followed U.S. Fish and Wildlife Service's (USFWS 2017) *Survey Guidelines for Listed Large Branchiopods* for dry-season sampling and consisted of first soil collection, second soil processing and analysis, and last cysts culturing as described below.

SOIL COLLECTION

Dry soils were collected on December 21, 2020 by Psomas Senior Biologist, Allison Rudalevige, as authorized by USFWS under permit number TE-177979-02 of Section 10(a)(1)(A) of the federal Endangered Species Act (ESA), 16 U.S.C. 1531 et seq., and its implementing regulations (Appendix A). The collected soils were delivered to HBC for subsequent processing and analysis as described below.

SOIL PROCESSING AND ANALYSIS

Soil samples obtained from Psomas were processed and analyzed by Dr. Brent Helm of HBC as authorized by the USFWS under recovery permit number TE-795930-10.2 of Section 10(a)(1)(A) of the federal ESA, 16 U.S.C. 1531 et seq., and its implementing regulations (Appendix A). In HBC's laboratory, a brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The collected soil material was placed in the brine solution. The soil material was then gently worked by hand to breakdown any persistent soil structure. The organic material rising to the top of the brine solution was skimmed off and placed in a 600-micron diameter pore-size sieve stacked atop a 75-micron diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The soil retained from the 75-micron diameter pore size sieve was then removed and thinly (≈1.0 mm) spread into plastic petri dishes.

The contents of each petri dish were examined under a 10 to 252-power zoom binocular microscope. A minimum of 0.5-hour was spent searching the contents of each petri dish for large branchiopod cysts (embryonic eggs). Dr. Helm's large branchiopod cyst reference collection and scanning electron micrographs of cysts (Belk 1989, Brendock *et al*. 2008, Gilchrist 1978, Hill and Shepard 1998, Mura 1991, and Rabet 2010) were used to identify and compare any cysts observed within the soil samples. This processing method (described above) favors the detection of cysts belonging to the genera *Branchinecta*, *Lepidurus*, and *Streptocephalus* since these three genera have species that are federally listed. Evidence of other aquatic macroinvertebrates encountered was also noted on the laboratory data sheet.

Because there are several species within the genus *Branchinecta* that could occur or are known to occur within the vicinity of the Project, cysts belonging to the genus *Branchinecta* observed within the soils, were cultured to determine species as described below.

CYST CULTURING

Petri dishes containing soils with *Branchinecta* cysts were placed into individual 6 quart plastic containers. The soils were saturated with 50º F well water (non-chlorinated) and allowed to dry. This saturation and drying process was repeated three times. The soils were then inundated completely with 50º F well water. The containers holding the inundated soils were inserted into an environmental chamber. The environmental chamber controls were set to mimic the winter light, humidity, and temperature fluctuations of the Project's vicinity. The contents of the containers were monitored daily for fairy shrimp hatchlings (instars).

If no hatchlings were observed after ten (10) days, the containers were removed from the environmental chamber and the soils were allowed to completely dry before reinitiating the hatching process described above. A total of three hatching attempts were performed on each soil sample.

Fairy shrimp hatchlings were feed ground fish food and reared in the environmental chamber until they were mature enough to be identified using dichotomous keys and diagrams from "Fairy Shrimps of California's Puddles, Pools, and Playas" (Eriksen and Belk 1999), two recent publications concerning the identification of San Diego fairy shrimp (*Branchinecta sandiegonensis*) (Simovich et al 2013; Patel et al. 2018), and compared to Dr. Helm's large branchiopod reference collection. Representative mature specimens were obtained from each container and preserved in 95% ethanol as species vouchers.

RESULTS

SOIL COLLECTION

Soil samples collected from a total of five features by Psomas (Exhibit 3) were processed and analyzed.

SOIL PROCESSING AND ANALYSIS

Visual examinations of the soils revealed the presence of cysts belonging to the genus *Branchinecta* in all five of the features sampled (Table 1). No evidence of cysts belonging to the genus *Streptocephalus* were observed in the soils collected. Representative photographs of the features sampled are provided in Appendix B.

Table 1. Results of Soil Examinations

Feature No.	Invertebrates Present (X)				
	Insects Exo-skeletons	Cladocera Ephippia	Ostracod Carapaces	Collembola	Abundance of Large Branchiopod Cysts*
					Branchinecta sp.
1	X	X	X	X	Medium
2	X	X	X	X	Low
3	X	X	X	X	Medium
4	X	X	X	X	Low
5	X	X	X	X	Low

*Abundance categories are derived from USFWS's Survey Guidelines for the Listed Large Branchiopods - Section VI(d) (none = no cysts found in sample; low abundance = estimate of 1-10 cysts/100 ml soil; medium abundance = estimate of 11-50 cysts/100 ml soil; high abundance = estimate of more than 50 cysts/100 ml soil)

CYST CULTURING

After three hatching attempts, a total of thirty (30) individual versatile fairy shrimp (*Branchinecta lindahli*) were hatched and raised to maturity from the soils of Features 1, 2, 3, 4, and 5 (Table 2). The versatile fairy shrimp has no state or federal-listing status.

Table 2. Results of Cyst Culturing from Dry-season Sampling Conducted at the Dunlap Drive Recycled Water Pipeline Replacement Project

Feature #	Number of *Branchinecta lindahli* Identified per Hatching Round Number							
	1		2		3		All Rounds Combined	
	Male	Female	Male	Female	Male	Female	Male	Female
1	1	3	0	2	1	0	2	5
2	2	1	1	0	0	0	3	1
3	6	1	1	3	2	1	9	5
4	2	0	0	1	0	1	2	2
5	0	1	0	0	0	0	0	1
Total	**11**	**6**	**2**	**6**	**3**	**2**	**16**	**14**

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U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2017. Survey guidelines for the listed large branchiopods. 24 pp. Dated: 31 May 2015 (Revised November 13, 2017).

EXHIBIT 1.
PROJECT LOCATION



Aerial Source: Esri, Maxar 2019

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Project Location

Exhibit 1

Dunlap Recycled Water Pipeline Project

N W E S

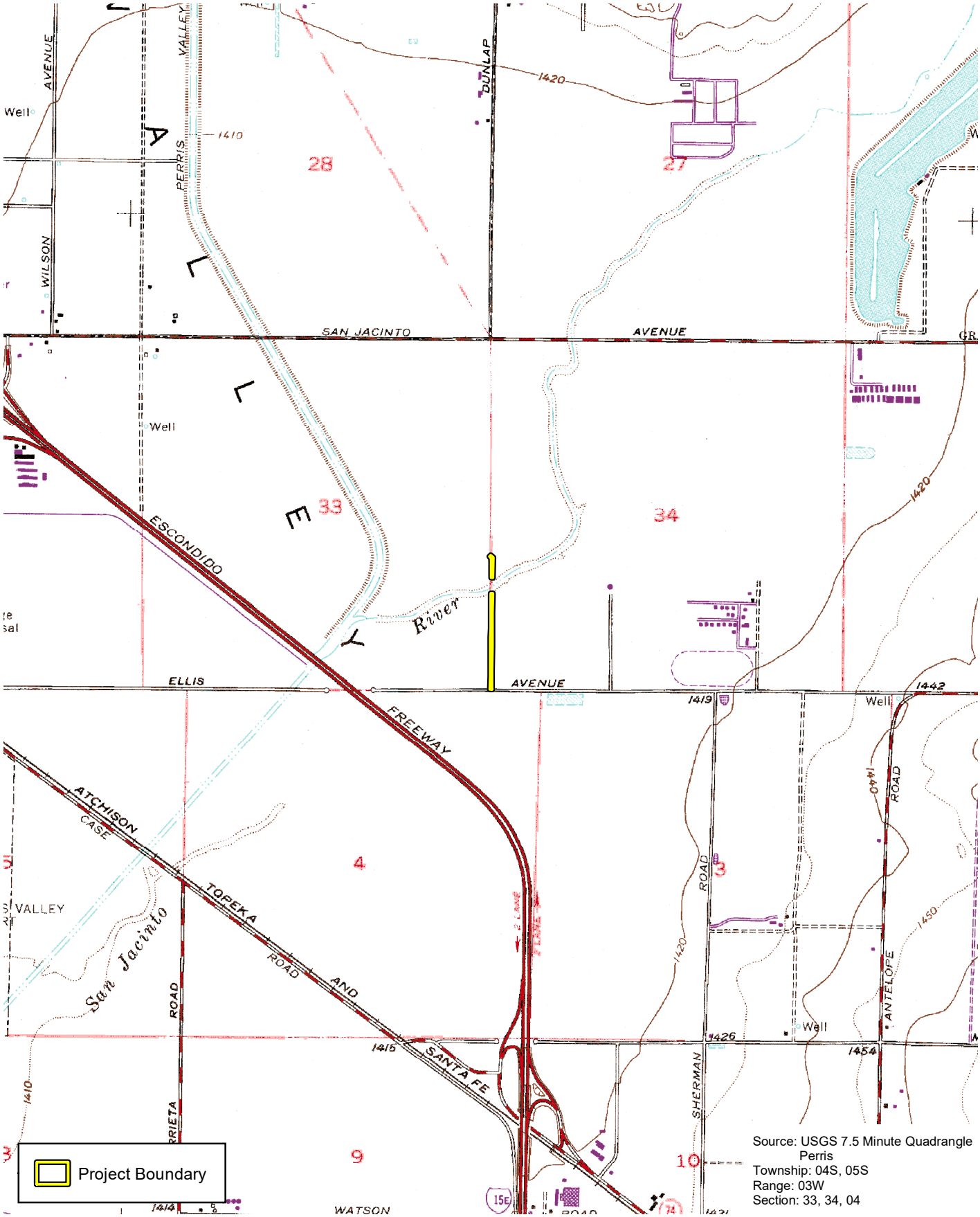
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Feet

PSOMAS

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EXHIBIT 2.
USGS 7.5-MINUTE DIGITAL QUADRANGLE



Source: USGS 7.5 Minute Quadrangle
Perris
Township: 04S, 05S
Range: 03W
Section: 33, 34, 04

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USGS 7.5-Minute Digital Quadrangle

Exhibit 2

Dunlap Recycled Water Pipeline Project

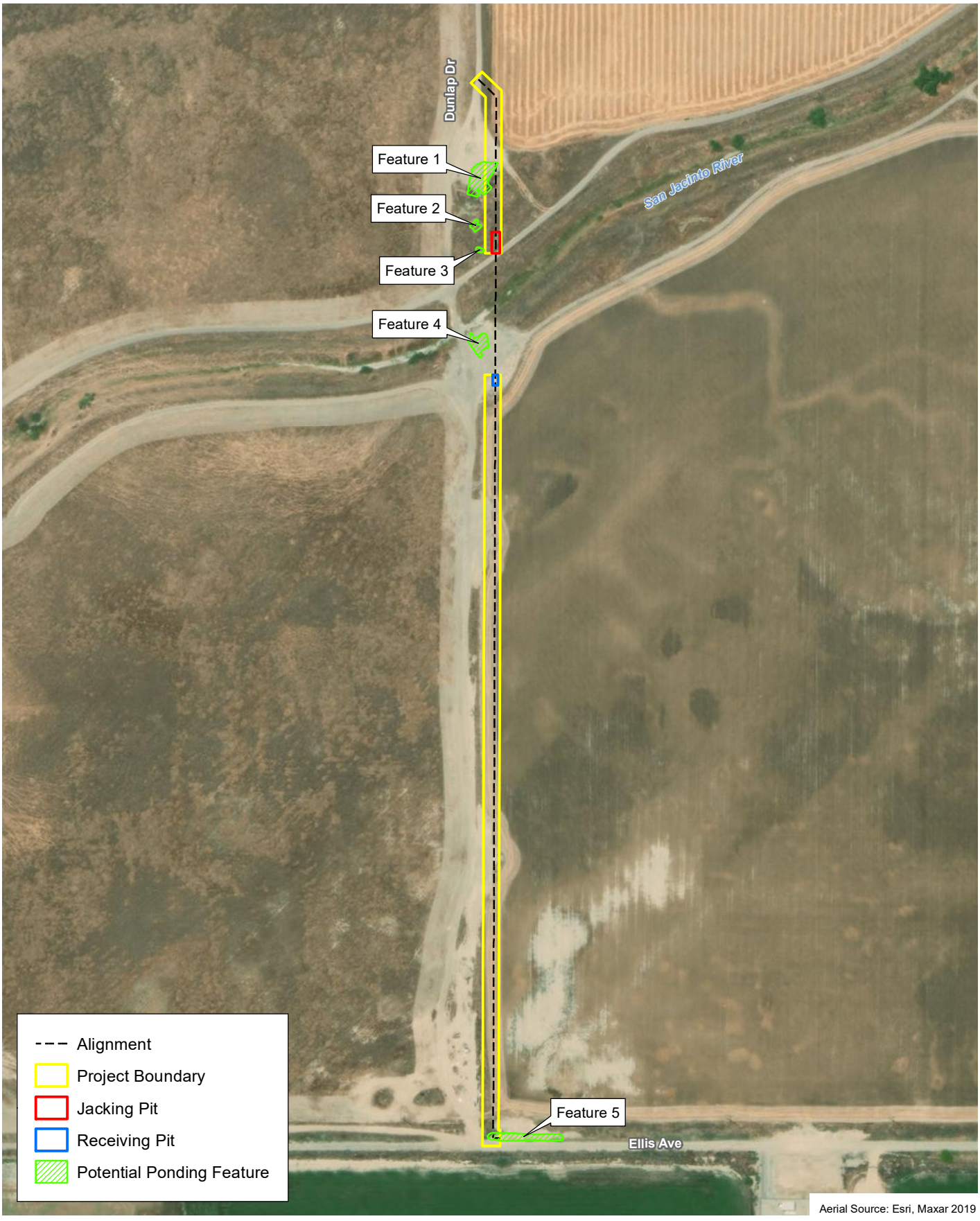
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EXHIBIT 3.
FAIRY SHRIMP SAMPLING LOCATIONS



Aerial Source: Esri, Maxar 2019

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Fairy Shrimp Sampling Locations

Exhibit 3

Dunlap Recycled Water Pipeline Project

N W E S

250 125 0 250

Feet

PSOMAS

(Rev: 01/12/2021 MMD) R:\Projects\EAS\3EAS020103\Graphics\FShrimp\ex_FShrimp.pdf

APPENDIX A.
USFWS AUTHORIZATION

From: allison.rudalevige@psomas.com,
To: bhelm69485@aol.com,
Subject: FW: [EXTERNAL] FW: Notification of Wet/Dry Season Vernal Pool Fairy Shrimp Surveys - Riverside County, CA
Date: Tue, Jan 12, 2021 2:26 pm
Attachments: FShrimp Notif-121020.pdf (1028K)

Hi Brent-

Below please find the USFWS authorization to proceed with wet and dry season surveys.

Allison D. Rudalevige
P S O M A S | Balancing the Natural and Built Environment
Senior Biologist

Resource Management

5 Hutton Centre Drive Suite 300, Santa Ana, CA 92707

714.751.7373

www.Psomas.com

From: Love, Stacey <stacey_love@fws.gov>
Sent: Thursday, December 17, 2020 6:01 PM
To: Allison Rudalevige <allison.rudalevige@psomas.com>
Cc: Cleary-Rose, Karin <Karin_Cleary-Rose@fws.gov>; broadhej@emwd.org; Steve Norton <steve.norton@psomas.com>
Subject: Fw: [EXTERNAL] FW: Notification of Wet/Dry Season Vernal Pool Fairy Shrimp Surveys - Riverside County, CA

Allison,

We approve your request to conduct a dry season sample for vernal pool branchiopods PROVIDED you document that the soil is dry – i.e., dry to the touch, too dry to make a ped (when the soil is moist enough that you can squish small clumps of it together with just the thumb and forefinger of one hand and it will stick together).

Additionally, please consider this email our approval for you to commence wet season surveys at this location according to the accepted survey guidelines for the listed large branchiopods dated November 13, 2017, and pursuant to the conditions of your recovery permit.

Please note that the LA County Natural History Museum encourages deposition of all collected fairy shrimp, not only listed species.

I look forward to receiving your survey report.

Regards,

Stacey Love

Recovery Permit Coordinator
Carlsbad (incl. Palm Springs) field office

(click here for jurisdiction map)

U.S. Fish and Wildlife Service
2177 Salk Avenue, Ste. 250
Carlsbad, CA 92008
(760) 431-9440 x 263

stacey_love@fws.gov

Pacific Southwest Region Recovery Permits web page

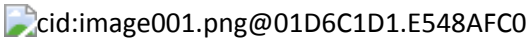
Permittees: Please include your permit number in all correspondence and reporting, thank you.

From: Allison Rudalevige <allison.rudalevige@psomas.com>
Sent: Thursday, December 17, 2020 4:08 PM
To: Love, Stacey <stacey_love@fws.gov>
Subject: [EXTERNAL] FW: Notification of Wet/Dry Season Vernal Pool Fairy Shrimp Surveys - Riverside County, CA

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Stacey-
I hope you've already gotten this. I know based on the 15-day notification time period, USFWS has until Dec 24 to respond. However, I was hoping to do the dry season soil collection on December 23. Please let me know if this would be an issue. Thank you.

Allison D. Rudalevige
PSOMAS | Balancing the Natural and Built Environment
Senior Biologist
Resource Management
714.481.8024 | www.Psomas.com



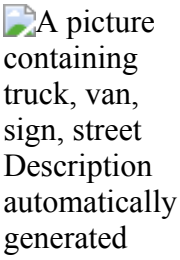
From: Steve Norton <steve.norton@psomas.com>
Sent: Thursday, December 10, 2020 3:08 PM
To: Stacey_Love@fws.gov
Cc: Allison Rudalevige <allison.rudalevige@psomas.com>; Broadhead, Joseph <broadhej@emwd.org>; Garcia, Justin@Wildlife <Justin.Garcia@wildlife.ca.gov>
Subject: Notification of Wet/Dry Season Vernal Pool Fairy Shrimp Surveys - Riverside County, CA

Good afternoon,

On behalf of Allison Rudalevige, please see the attached notification to conduct wet and dry season surveys for vernal pool branchiopods (i.e., fairy shrimp) for the Dunlap Drive Recycled Water Pipeline Replacement Project located in the City of Perris and unincorporated Riverside County, California.

If you have any questions or concerns, please don't hesitate to contact either Allison or myself.
Thank you,
-Steve Norton

Steve Norton
PSOMAS | Balancing the Natural and Built Environment
Senior Project Manager | Senior Biologist
Resource Management
714.481.8037 (office/cell)
www.Psomas.com



Psomas' Orange County Office is moving down the street to
5 Hutton Centre Drive, Suite 300. For now, we continue to work
remotely but hope to be in the new office by the end of 2020.

APPENDIX B.
REPRESENTATIVE PHOTOGRAPHS



December 21, 2020. Dry season sampling of Feature 1.



December 21, 2020. Dry season sampling of Feature 2.

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Representative Photographs

Appendix B

Dunlap Recycled Water Pipeline Project

PSOMAS

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December 21, 2020. Dry season sampling of Feature 3.



December 21, 2020. Dry season sampling of Feature 4.

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Representative Photographs

Appendix B

Dunlap Recycled Water Pipeline Project

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December 21, 2020. Dry season sampling of Feature 5.

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Appendix J

Wet Season Vernal Pool Branchiopod Surveys

August 17, 2021

Joe Broadhead
Principal Water Resources
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, California 92572-8300

VIA EMAIL
broadhej@emwd.org

Subject: Results of Vernal Pool Branchiopod Surveys for the Eastern Municipal Water District Dunlap Drive Recycled Water Pipeline Replacement Project

Dear Mr. Broadhead:

This Letter Report presents the findings of vernal pool branchiopod (i.e., fairy shrimp) surveys conducted in 2021 for the Eastern Municipal Water District's (the District's) proposed Dunlap Drive Recycled Water Pipeline Replacement Project (hereinafter referred to as the "project"). Surveys were conducted from February 2020 to March 2021 according to guidelines established by the U.S. Fish and Wildlife Service (USFWS) by a Biologist with the necessary Federal Endangered Species Act (ESA) 10(a) survey permit. Vernal pool conditions were not suitable for conducting surveys during the 2020/2021 wet season due to lack of inundation in some features.

PROJECT LOCATION AND DESCRIPTION

The project involves the replacement of section of pipe for a recycled water pipeline in the City of Perris, Riverside County, California (Exhibit 1). The proposed pipeline replacement is located parallel to the existing pipeline and Dunlap Drive. The replacement pipe would measure 2,000 linear feet and would extend north from Ellis Avenue and end approximately 550 feet north of the San Jacinto River crossing. The project site is depicted on the U.S. Geological Survey's (USGS') Perris 7.5-minute quadrangle (Exhibit 2).

The majority of the planned replacement pipeline would be 36-inches in diameter; however, the pipeline segment crossing the San Jacinto River would be increased to 48-inches in diameter allowing for a jack-and-bore installation beneath the San Jacinto River. All pipeline segments would be constructed within a 30-foot utility easement. Construction methods used to install the pipeline would primarily include an open-cut-trenching method; however, the jack-and-bore method would be used to ensure the project avoids impacts to the San Jacinto River. The project would require a minimum open cut width of 6.5 feet within the existing easement. The area with potential to be impacted by the project (hereafter referred to as "project boundary") consists of the 30-foot easement where project-related ground disturbance (ex. trenching, jacking- and receiving-pits, dirt spoil storage, etc.) may occur.

5 Hutton Centre Drive
Suite 300
Santa Ana, CA 92707

Tel 714.751.7373
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The project is located in the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP); however, the District is not a signatory to the MSHCP Implementation Agreement. The project is not currently covered by the provisions of the MSHCP.

ENVIRONMENTAL SETTING

Topography on the project site is relatively flat at an elevation of approximately 1,415 feet above mean sea level (msl). One drainage, the San Jacinto River, crosses the project site. The project is located on low-sloped areas mapped with clay soils known to support pooling of surface water for extended periods. Soils mapped on the project site include riverwash; Willows silty clay; Willows silty clay, saline-alkali; Willows silty clay, deep, saline-alkali; and Willows silty clay, deep, strongly saline-alkali (Exhibit 3).

The project site contains the following vegetation types and other areas: disturbed alkali sink, ruderal, disturbed riverine herb, active field cropland, fallow field cropland, disturbed, and developed. The surrounding land uses include active and fallow agricultural lands.

BACKGROUND

Fairy shrimp are members of the Order Anostraca that are restricted to inland (i.e., non-marine), non-flowing, primarily ephemeral waters (Eriksen and Belk 1999). They produce embryonated resting eggs called "cysts" that allow them to persist in ephemeral waters. These cysts are viable in conditions such as drying, freezing, or digestion by animals. This characteristic allows them to be distributed between pools over great distances either in the digestive tract or via mud on the bodies of other animals such as waterfowl or cattle. The cysts hatch under appropriate environmental conditions for a particular species.

A search of the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) was conducted prior to initiating the survey effort to determine which listed branchiopod(s) may reside in close proximity to the project. Background information on these listed fairy shrimp species is provided below.

Riverside Fairy Shrimp

The USFWS listed the Riverside fairy shrimp (*Streptocephalus woottoni*) as an Endangered species on August 3, 1993. The distribution of this species is among the most restricted ranges for any of the fairy shrimp on the west coast. They are known from Ventura, Los Angeles, Orange, western San Diego, and Riverside counties and immediately south of the international border in Baja California, Mexico (USFWS 2005). They are generally found only in natural and created pools that are deep (greater than 30 centimeters). Development and maturation are much slower in this species than other fairy shrimp, with an average of seven to eight weeks to full maturity (Hathaway and Simovich 1996). Due to this slow development, the minimum duration for inundation of a pool that can support Riverside fairy shrimp is nine to ten weeks (Gonzalez et al. 1996; Hathaway and Simovich 1996).

The nearest reported occurrences of this species are 7 and 8 miles to the south; however, these populations are listed as extirpated (CDFW 2021). The closest presumed extant population is approximately 9.3 miles to the south (CDFW 2021).

On May 30, 2001, the USFWS published a Final Rule designating 6,870 acres of land as critical habitat for the Riverside fairy shrimp in Los Angeles, Orange, Riverside, San Diego, and Ventura Counties (USFWS 2001). USFWS proposed and subsequently finalized a revised critical habitat designation first on April 12, 2005, and again on December 4, 2012. The latter final critical habitat designation currently

covers 1,724 acres of land in Orange, San Diego, and Ventura counties (USFWS 2012). The project site is not located in final critical habitat for Riverside fairy shrimp.

METHODS

The area surveyed for fairy shrimp consists of five potential ponding areas (as identified by cracked soils and depressional topography) that intersect the project alignment or project boundary. These features were observed during vegetation mapping for the project. The USFWS (Carlsbad field office) and the CDFW were notified regarding wet and dry season survey initiation on December 10, 2020. Dry season soil collecting was performed prior to wet season surveys and the results have been reported separately (Psomas 2021).

Sampling generally followed the USFWS' *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2017). Psomas Senior Biologist Allison Rudalevige (TE No. 177979-2) performed all surveys. Surveys occurred weekly December 30, 2020 to March 27, 2021, unless ponding features dried and refilled.

The location of each ponding feature was recorded with a Garmin Etrex Vista Global Positioning System (GPS) receiver. During each survey visit, approximate pond surface area, water depth, water temperature, air temperature, and habitat condition were recorded for each feature on USFWS vernal pool data sheets. Photographs of each ponding feature and the surrounding area are included in Attachment A.

Sampling for branchiopod species was performed with the aid of a dip net; this dip net was passed through all ponds that retained water at least 3 centimeters deep at the time of the survey. Sampling occurred randomly through all portions (e.g., along the margins and throughout the center) of each of the ponds from the bottom to the surface. The net was periodically inspected for fairy shrimp.

SURVEY RESULTS

Five ponding features were originally identified within the project boundary. One feature (Feature 5) extends along Ellis Avenue on both sides of Dunlap Drive during periods of highest inundation. As the area dries, it becomes two or more separate features (5A and 5B). Feature 5A occurs within the project boundary and Feature 5B is outside the project boundary on Dunlap Drive. The project boundary was surveyed when Features 1, 2, 3, 4, or 5A experienced inundation; incidental observations were made for Feature 5B.

Ponding features 4 and 5 were inundated for a portion of the survey period, however, Features 1, 2, and 3 did not experience inundation during the 2020/2021 wet season. Road ruts outside the project boundary exhibited inundation over the course of the surveys and were incidentally examined, but not formally sampled. The location of the five potential ponding features is shown on Exhibit 4. Table 1 summarizes the results of the monitoring effort. Attachment B includes the USFWS Vernal Pool Data Sheets.

TABLE 1
SUMMARY OF VERNAL POOL BRANCHIOPOD SURVEY RESULTS

Date	Ponding Feature No.*	Pond Depth (cm)	Approximate Pond Size (m^2)	Branchiopod Species Detected	Species Density	Number Collected (Males/Females)
December 30, 2020	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	4	15	–	–	–
	5B	9	18	–	–	–
January 6, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	dry	n/a	–	–	–
	5B	3	16	*Branchinecta lindahli*	2♂, 6♀	0
January 29, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	38	1,105	–	–	–
	5A–5B	29	494	–	–	–
February 4, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	8	40	–	–	–
February 11, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	dry	n/a	–	–	–
	5B	4	13	*Branchinecta lindahli*	3♀	0
March 5, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	3	2	–	–	–
March 12, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A–5B	18	409	–	–	–
March 19, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	13	78	–	–	–
March 27, 2021	1	dry	n/a	–	–	–
	2	dry	n/a	–	–	–
	3	dry	n/a	–	–	–
	4	dry	n/a	–	–	–
	5A	dry	n/a	–	–	–

cm: centimeters; m^2: square meters; n/a: not applicable; "–" indicates that no fairy shrimp were observed.

* When Feature 5A (within project boundary) and 5B (outside project boundary) are listed separately, they lack a direct hydrologic connection; when they are listed on the same line, they have a continuous hydrologic connection.

CONCLUSIONS

Precipitation during the 2020/2021 wet season was below average. The region received approximately 3.5 inches of precipitation between April 1, 2020 and March 31, 2021 (data taken from Perris – Menifee – South Coast Valleys Station 240) (CIMIS 2021). The average annual precipitation in the region is 12.44 inches (data taken from Elsinore, CA US Station) (NOAA 2021).

Ponding Features 1, 2, and 3 did not experience inundation over the course of the 2020/2021 wet season. The dry season survey determined versatile fairy shrimp (*Branchinecta lindahli*) cysts were present in these features (Psomas 2020). The presence or absence of listed fairy shrimp species could not be confirmed during the 2020/2021 wet season per the inundation duration requirements in the USFWS survey protocol.

Ponding Features 4 and 5 did experience inundation in the 2020/2021 wet season and fairy shrimp were confirmed to have emerged during that inundation period. All fairy shrimp observed in these features were versatile fairy shrimp and the survey results for listed fairy shrimp species were negative. According to USFWS survey protocol, the inundation period was not sufficient (i.e., less than 120 days) and the absence of listed fairy shrimp could not be confirmed.

If you have any comments or questions, please contact Steve Norton at Steve.Norton@psomas.com or 714.481.8037.

Sincerely,

PSOMAS

Steve Norton
Project Manager

Allison D. Rudalevige
Senior Biologist

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Allison D. Rudalevige (TE No. 177979-)
Senior Biologist

Date: August 17, 2021

Enclosures:
Exhibit 1 – Project Location
Exhibit 2 – USGS 7.5-Minute Digital Quadrangle
Exhibit 3 – Soil Types
Exhibit 4 – Ponding Features
Attachment A – Representative Photographs
Attachment B – Vernal Pool Data Sheets

cc: Stacey Love, USFWS
Justin Garcia, CDFW

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Aerial Source: Esri, Maxar 2019

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Project Location

Exhibit 1

Dunlap Drive Recycled Water Pipeline Replacement Project

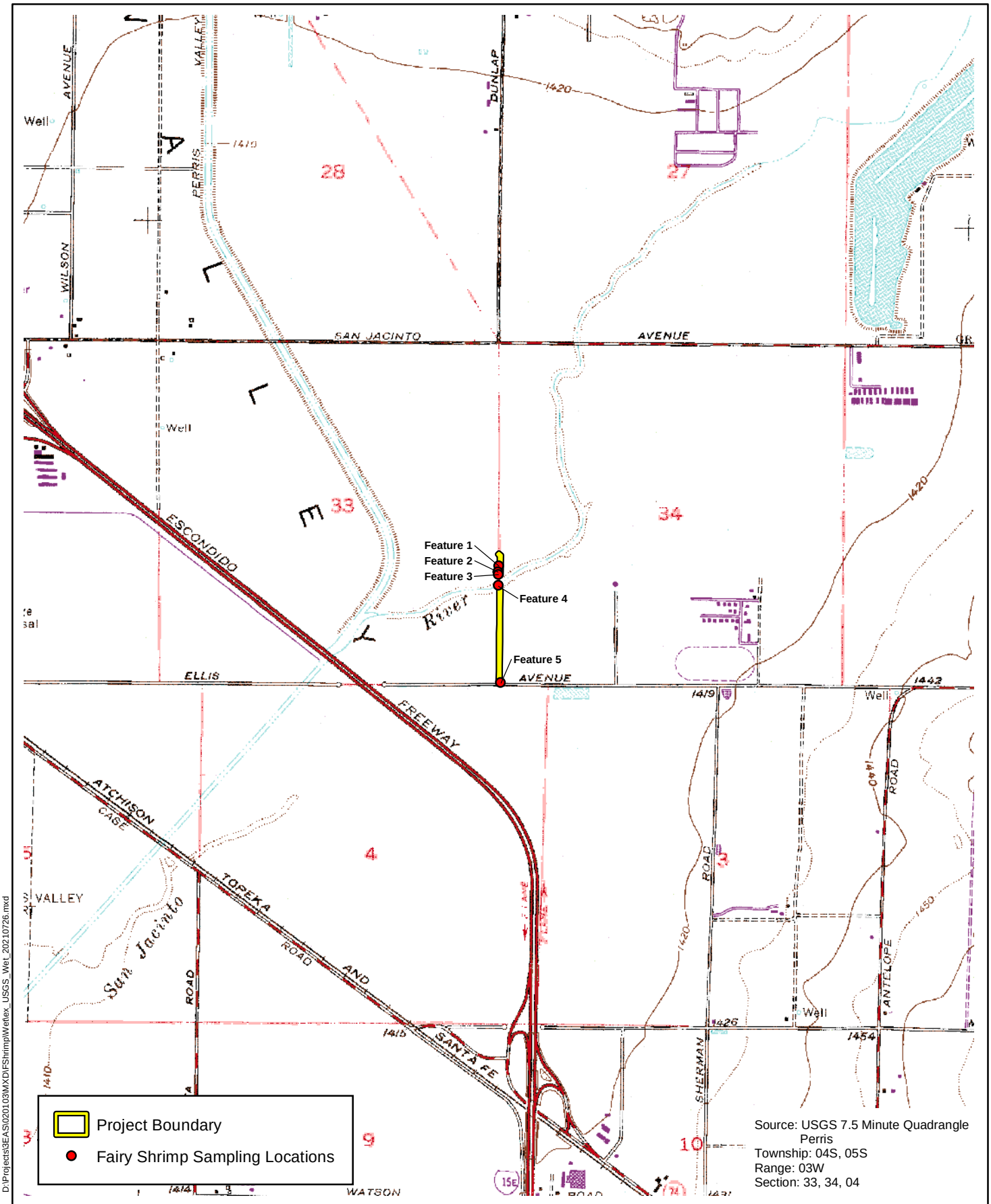
N W E S

700 350 0 700

Feet

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USGS 7.5-Minute Digital Quadrangle

Exhibit 2

Dunlap Drive Recycled Water Pipeline Replacement Project

N W E S

2,000 1,000 0 2,000 Feet

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Data Source: U.S. Department of Agriculture; Natural Resources Conservation Service
Aerial Source: Esri, Maxar 2019

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Soil Types

Exhibit 3

Dunlap Drive Recycled Water Pipeline Replacement Project

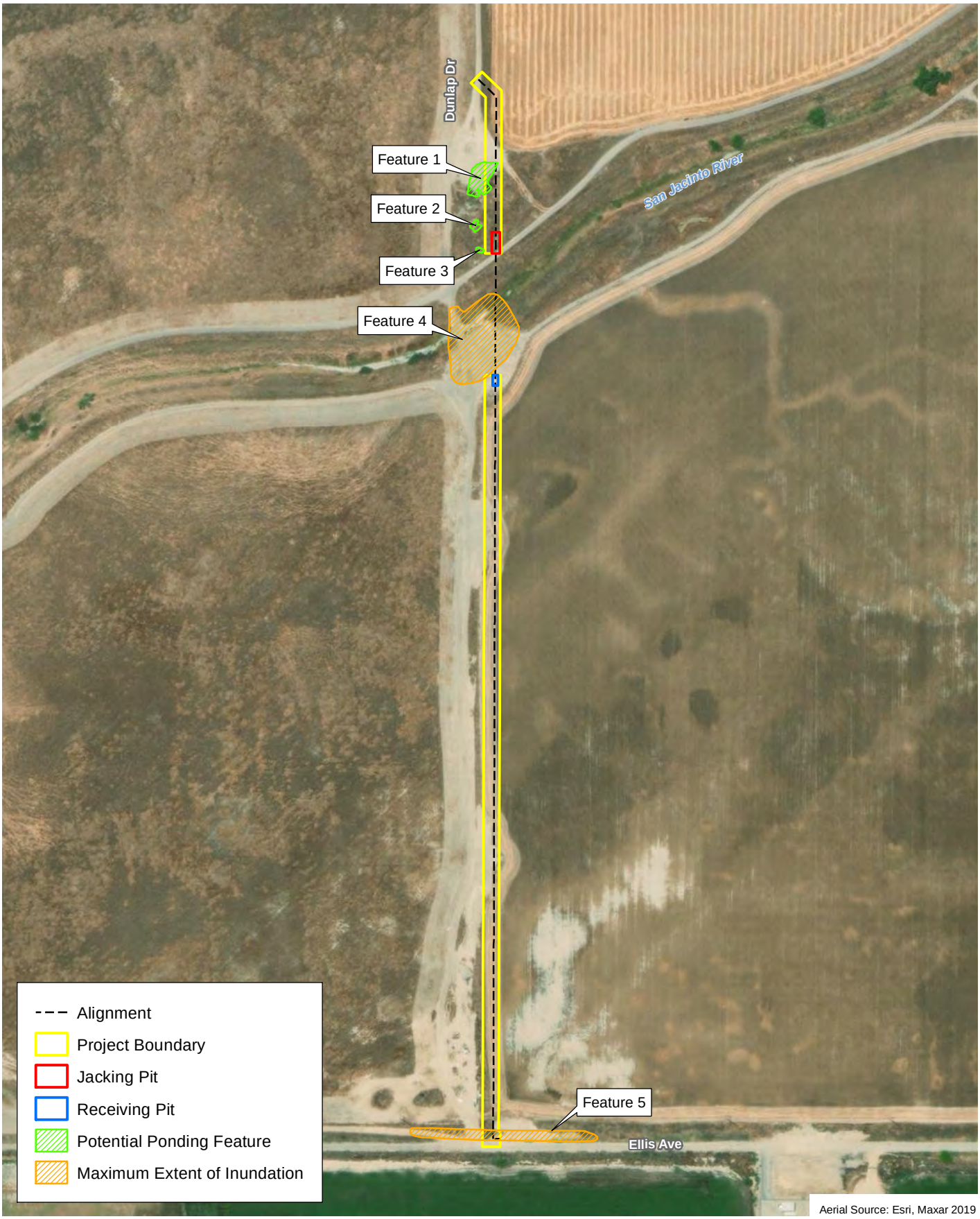
N W E S

300 150 0 300

Feet

PSOMAS

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Aerial Source: Esri, Maxar 2019

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Ponding Features

Exhibit 4

Dunlap Drive Recycled Water Pipeline Replacement Project

N W E S

250 125 0 250 Feet

PSOMAS

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ATTACHMENT A

REPRESENTATIVE PHOTOGRAPHS



Overview of the southern end of the project site, facing northeast (photograph taken on October 1, 2020 by ADR).



Feature 1 immediately following precipitation, facing north (photograph taken on January 29, 2021 by ADR).

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Representative Photographs

Attachment A-1

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

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Feature 2 immediately following precipitation, facing south (photograph taken on January 29, 2021 by ADR).



Feature 3 immediately following precipitation, facing south (photograph taken on January 29, 2021 by ADR).

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Representative Photographs

Attachment A-2

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

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Feature 4 immediately following precipitation, facing north (photograph taken on January 29, 2021 by ADR).



Feature 5 immediately following precipitation, facing west (photograph taken on January 29, 2021 by ADR).

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Representative Photographs

Attachment A-3

Dunlap Drive Recycled Water Pipeline Replacement Project

PSOMAS

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Feature 5B west of project site, facing west (photograph taken on January 6, 2021 by ADR).

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ATTACHMENT B

VERNAL POOL DATA SHEETS

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 12/30/20 | Time: 1145-1230 | Weather Conditions: Sunny, wind 0-1mph, 16°C

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	16	–	0	20-30	0	245	–	–	–	–	–	–	–	–	–	–	NP, TT, UG	dry
	3737462																		
2	482296	16	–	0	20-30	0	24	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737433																		
3	482299	16	–	0	20-30	0	10	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737420																		
4	482299	16	–	0	38	0	1105	–	–	–	–	–	–	–	–	–	–	NP, TT, UG	dry
	3737366																		
5A	482306	16	13	4	28*	15	494*	–	–	–	–	–	–	–	–	–	–	NP?, TT UG	roadside ditch
	3736912																		
5B	482295	16	13	9	–	18	–	–	–	–	–	–	–	–	–	–	–	NP?, TT UG	road rut
	3736911																		
							* 5A & 5B combined												

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 1/6/21 | Time: 1030-1215 | Weather Conditions: sunny; 18-22°C; wind 0-2

Feature ID #	UTM (Northing, Easting, Datum) WGS84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	18	–	0	20-30	0	215	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737462																		
2	482296	18	–	0	20-30	0	24	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737433																		
3	482299	18	–	0	20-30	0	10	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737420																		
4	482299																		
	3737366	20	–	0	38	0	1105	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
SA	482306																		
	3736912	22	–	0	28*	0	494*	–	–	–	–	–	–	–	–	–	–	NP?, TT UG	roadside ditch, dry
SB	482295	22	H, S	3		16		BRLI	–	–	–	–	–	–	–	–	–	NP?, TT UG	road rut 2@6 ft
	3736911																		
					*SA + SB combined														

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 1/29/21 | Time: 1011 – 1145 | Weather Conditions: cloudy, scattered showers, 9°C, wind 0-3mph

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C) Air	Temp (°C) Water	Depth (cm) Average	Depth (cm) Est. Max.	Surface Area (m x m) Present	Surface Area (m x m) Est. Max.	Crustaceans: Anostracans	Crustaceans: Notostracans	Crustaceans: Copepods	Crustaceans: Ostracods	Crustaceans: Cladocera	Insects: Coleoptera	Insects: Hemiptera	Insects: Diptera Culicidae	Insects: Diptera Chironomida	Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
1	482301	8	–	0	20-30	0	215	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737462																		
2	482296	8	–	0	20-30	0	24	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737433																		
3	482299	8	–	0	20-30	0	10	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737420																		
4	482299	8	7	38	38	1105	1105	–	–	–	–	–	–	–	–	–	–	NP, TT, UG	
	3737366																		
5A-5B	482306	8	7	28	28	494	494	–	–	–	–	–	–	–	–	–	–	NP? TT, UG	roadside ditch
(Continuous ponded area)	3736912																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 2/4/21 | Time: 1140-1315 | Weather Conditions: Sunny, 13-18°C, wind 0-3 mph

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	13	–	0	20-30	0	215	–	–	–	–	–	–	–	–	–	–	NP, TT UG	
	3737462																		
2	482296	13	–	0	20-30	0	24	–	–	–	–	–	–	–	–	–	–	NP UG	
	3737433																		
3	482299	13	–	0	20-30	0	10	–	–	–	–	–	–	–	–	–	–	NP UG	
	3737420																		
4	482299	13	–	0	38	0	1105	–	–	–	–	–	–	–	–	–	–	NP, TT UG	
	3737366																		
5A	482306	18	17	8	28	40	494	–	–	–	–	✓	✓	–	–	–	–	NP? TT UG	roadside ditch
	3736912																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 2/11/21 | Time: 1600-1630 | Weather Conditions: Sunny, 20°C, wind 3-5 mph

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	20	–	0	20-30	0	215	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737462																		
2	482296	20	–	0	20-30	0	24	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737433																		
3	482299	20	–	0	20-30	0	10	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737420																		
4	482299	20	–	0	38	0	1105	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737366																		
5A	482306	20	–	0	28*	0	494*	–	–	–	–	–	–	–	–	–	–	NP? TT UG	roadside ditch
	3736912																		
5B	482295	20		4		13		BRLI	–	–	–	–	–	–	–	–	–	NP? TT UG	road rut 3♀
	3736911																		
					*5A + 5B combined														

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*).
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 3/5/21 | Time: 1120-1155 | Weather Conditions: Sunny, 22°C, wind 0-2mph

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	22	-	0	20-30	0	215	-	-	-	-	-	-	-	-	-	-	NP, TT UG	dry
	3737462																		
2	482296	22	-	0	20-30	0	24	-	-	-	-	-	-	-	-	-	-	NP UG	dry
	3737433																		
3	482299	22	-	0	20-30	0	10	-	-	-	-	-	-	-	-	-	-	NP UG	dry
	3737420																		
4	482299	22	-	0	38	0	1105	-	-	-	-	-	-	-	-	-	-	NP, TT UG	dry
	3737366																		
5A	482306	22	23	3	28	2	494	-	-	-	-	-	-	-	-	-	-	NP? TT UG	roadside ditch
	3736912																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 3/12/21 | Time: 0845-1015 | Weather Conditions: sunny, 7°C. wind 0-2 mph

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	7	–	0	20-30	–	–	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737462																		
2	482296	7	–	0	20-30	–	–	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737433																		
3	482299	7	–	0	20-30	–	–	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737420																		
4	482299	7	–	0	38	–	1105	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737366																		
SA-SB	482306	7	9	18	28	409	494	–	–	–	–	✓	–	–	–	–	–	NP? TT UG?	roadside ditch
(continuous ponded area)	3736912																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Dunlap Recycled Water Pipeline | **County:** Riverside | **Quad:** Perris | **Township:** 04S | **Range:** 03W | **Section:** 33, 34

SURVEYOR / Permit Number: Allison Rudalevige, TE-177979-2

Date: 3/19/21 | Time: 1000-1100 | Weather Conditions: sunny, 14-18°C, wind 0-2

Feature ID #	UTM (Northing, Easting, Datum) WGS 84	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482301	14	←	0	20-30	0	215	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737462							–	–	–	–	–	–	–	–	–	–		
2	482296	14	–	0	20-30	0	24	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737433																		
3	482299	14	–	0	20-30	0	10	–	–	–	–	–	–	–	–	–	–	NP UG	dry
	3737420																		
4	482299	14	–	0	38	0	105	–	–	–	–	–	–	–	–	–	–	NP, TT UG	dry
	3737366																		
5A	482306	18°C	15°C	13	28	78	494	–	–	–	–	✓	–	–	–	–	–	NP? TT UG	roadside ditch
	3736912																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli)*.
For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.