Home 2 Suites Hotel

Initial Study Mitigated Negative Declaration

File No. 19-212

Lead Agency
City of Vacaville
Community Development Department, Planning Division
650 Merchant Street
Vacaville, California 95688

Technical Assistance:
Stantec Consulting Services Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, California 94597

April 3, 2020

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ACRONYMS AND ABBREVIATIONS

µg/m^3	micrograms per cubic meter
°F	degrees Fahrenheit
AB	Assembly Bill
ADT	average daily trips
AEC	Achievement Engineering Corporation
APN	Assessor's Parcel Number
applicant	Ark Studio, Inc.
BAAQMD	Bay Area Air Quality Management District
BAU	Business-As-Usual
bgs	below ground surface
BMP	best management practice
CalEEMod	California Emissions Estimator Model
CALFIRE	California Department of Forestry and Fire Protection
CalGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CCA	Coalition for Clean Air
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHRIS	California Historical Resources Information System
CH_4	methane
City	City of Vacaville
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CRPR	California Rare Plant Ranking
dB	decibel
dBA	A-weighted sound level
dBC	C-weighted sound level
DOC	California Department of Conservation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
ECAS	Energy Conservation Action Strategy
EDD	Employment Development Department

EO	executive order
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
General Plan	City of Vacaville General Plan
General Plan EIR	General Plan and Energy Conservation Action Strategy Environmental Impact Report
GHG	greenhouse gas
gpd	gallons per day
HCP	Habitat Conservation Plan
Hz	Hertz
I-80	Interstate 80
I-505	Interstate 505
in/sec	inches per second
ISMND	Initial Study Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
KBTU	100 British Thermal Units
KWhr	kilowatt hour
lbs/person/year	pounds per person per year
L_{dn}	day/night sound level
L_{eq}	equivalent sound level
L_{eq}-1-hr	hourly equivalent sound level
L_{max}	maximum instantaneous sound level
L_{min}	minimum instantaneous sound level
L_{xx}	Percentage sound level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MEI	Maximally Exposed Individual
mgd	million gallons per day
mg/m^3	milligrams per cubic meter
MLD	most likely descendant
$MTCO_2e$	metric tons of carbon dioxide equivalent
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos

NOx	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
OITC	Outside-Inside Transmission Class
PG&E	Pacific Gas and Electric
PM	particulate matter
$PM_{2.5}$	particulate matter (2.5 microns and less in diameter)
PM_{10}	particulate matter (10 microns and less in diameter)
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
RCNM	Roadway Construction Noise Model
REL	relative exposure limit
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCWA	Solano County Water Agency
sec	Seconds
SIP	State Implementation Plan
SMAQMD	Sacramento Metro Air Quality Management District
SO_2	sulfur dioxide
STA	Solano Transportation Authority
STC	Sound Transmission Class
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
UCMP	University of California, Berkeley, Museum of Paleontology
USACE	United States Army Corp of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VFD	Vacaville Fire Department
VMT	vehicle miles travelled
VPD	Vacaville Police Department
WHRS	California Wildlife Habitat Relationships System
WWTP	Wastewater Treatment Plan
YSAQMD	Yolo-Solano Air Quality Management District



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INITIAL STUDY MITIGATED NEGATIVE DECLARATION

Project Title: Home 2 Suites Hotel

Project Description: Ark Studio, Inc. (applicant) is proposing to develop the Home 2 Suites Hotel Project (proposed project) in the City of Vacaville (City), California. The proposed project would be located on assessor's parcel number (APN) 0133-120-380 within the Vaca Valley Business Park Policy Plan area. The applicant is proposing to subdivide this parcel and construct a four-story hotel on approximately 2.26 acres. The proposed hotel would include 107 guest rooms and provide other onsite guest amenities including, an indoor swimming pool, fitness room, and dining/gathering area. The proposed project also includes 128 onsite surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities.

Name of Lead Agency:
City of Vacaville
Community Development Department, Planning Division
650 Merchant Street
Vacaville, California 95688

Lead Agency Contact Information:
Peyman Behvand, City Planner
Phone: (707) 449-5332
Email: peyman.behvand@cityofvacaville.com

Determination: The City of Vacaville has determined that a) all potentially significant or significant impacts required to be identified in the Initial Study Mitigated Negative Declaration (ISMND) have been identified and analyzed; and b) with respect to each significant impact on the environment either of the following apply: 1) changes or alterations have been required in or incorporated into the proposed project that avoid or mitigate the significant impacts to a level of less than significant; or 2) those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency. The ISMND and supporting documents are available at the City of Vacaville Community Development Department, located at 650 Merchant Street Vacaville, California 95688, and online by searching the project name at: http://bit.ly/Home2SuitesHotel

By: Peyman Behvand Date: April 3, 2020

Peyman Behvand, City Planner

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1.0 INTRODUCTION

Ark Studio, Inc. (applicant) is proposing to develop the Home 2 Suites Hotel Project (proposed project) in the City of Vacaville (City), California (Figure 1). The proposed project would be located on assessor's parcel number (APN) 0133-120-380 within the Vaca Valley Business Park Policy Plan area. The applicant is proposing to subdivide this parcel and construct a four-story hotel on approximately 2.26 acres. The proposed hotel would include 107 guest rooms and provide other onsite guest amenities, including an indoor swimming pool, fitness room, and dining/gathering area. The proposed project also includes 128 onsite surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities.

1.1 PROJECT TITLE

Home 2 Suites Hotel

1.2 LEAD AGENCY

City of Vacaville
Community Development Department, Planning Division
650 Merchant Street
Vacaville, California 95688

1.3 LEAD AGENCY CONTACT

Peyman Behvand, City Planner
Community Development Department, Planning Division
650 Merchant Street
Vacaville, California 95688
Phone: (707) 449-5332
Email: peyman.behvand@cityofvacaville.com

1.4 PURPOSE

The purpose of the proposed project is to develop a four-story hotel of 56,651 square feet on an approximately 2.26-acre site within the Vaca Valley Business Park Policy Plan area. This Draft Initial Study Mitigated Negative Declaration (ISMND) has been prepared to evaluate the proposed project for potential environmental effects in compliance with the California Environmental Quality Act (CEQA). The City is the lead agency under CEQA and has the principal responsibility for carrying out or approving a project which may have a significant effect on the environment. This ISMND has been prepared in anticipation of determining that all potentially significant impacts from implementing the proposed project can be mitigated to less than significant levels. This document has been prepared in accordance with CEQA, Public Resources Code (PRC) §21000 et seq., and the State CEQA Guidelines, California Code of Regulations (CCR), Title 14, §15000 et seq.

1.5 PROJECT LOCATION

The project site is located in northeast Vacaville near the intersection of New Horizons Way and East Akerly Drive. The project site is within the Vaca Valley Business Park Policy Plan area, which is bordered by Interstate-505 (I-505) to the west, Interstate-80 (I-80) to the south and east, and Vaca Valley Parkway to the north. The Nut Tree Airport is approximately 1.25 miles southwest of the project site.

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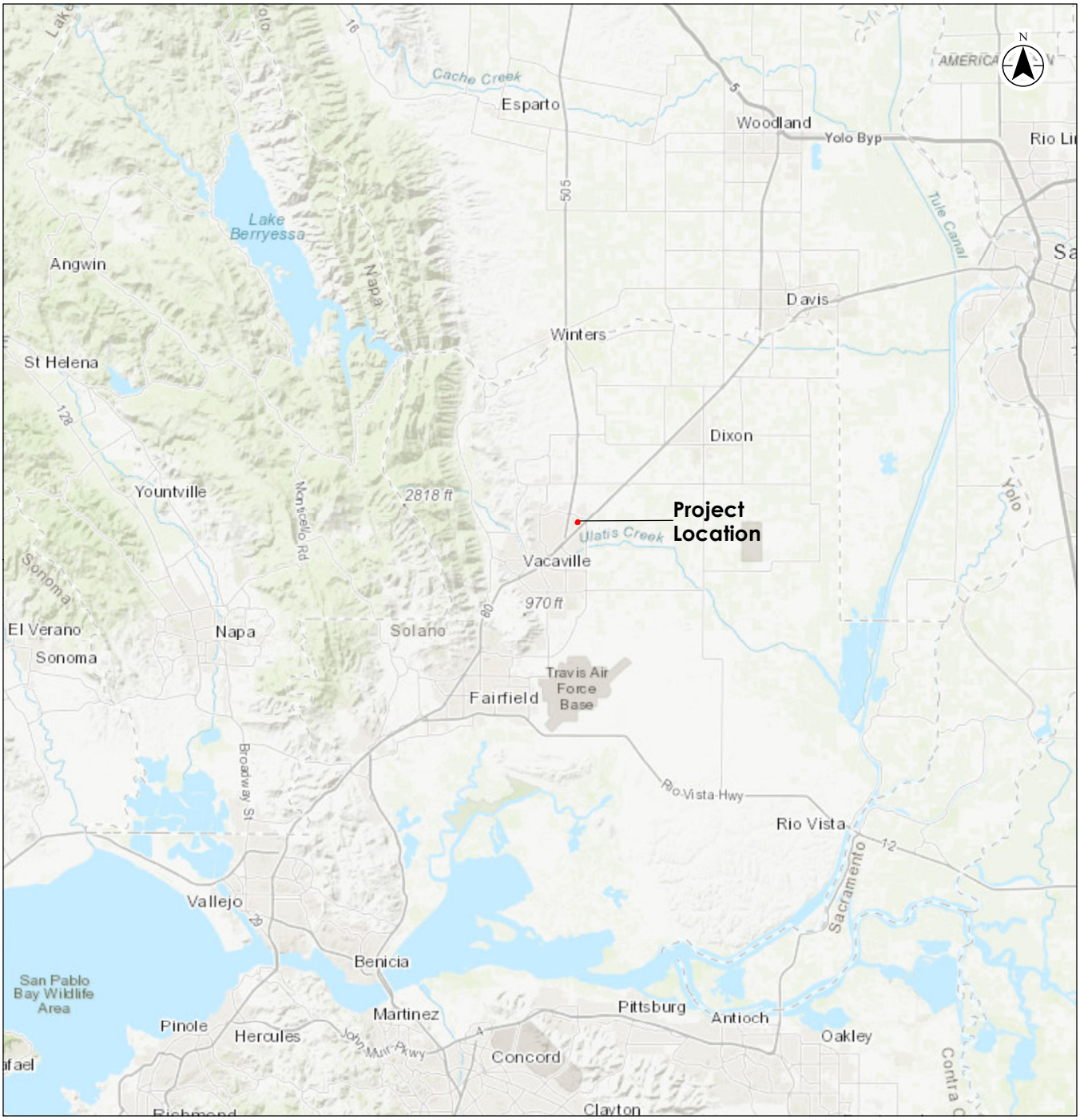



Notes
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2. Base features produced under license with the Ontario

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0 5 10 Miles

1:500,000 (at original document size of 8.5x11)

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Project Location
Vacaville, California

Prepared by PG on 2019-09-04
Technical Review by KJ on 2019-09-04

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
1

Title
Regional Overview

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1.6 EXISTING SETTING AND SURROUNDING LAND USES

The proposed project would be located on APN 0133-120-380 within the Vaca Valley Business Park Policy Plan area. This parcel is approximately 3.41 acres and is currently undeveloped. The applicant is requesting to subdivide this parcel. Therefore, the project site is defined as the south portion of the parcel, which is approximately 2.26 acres. The project site's topography is generally flat with an elevation of 90 feet above mean sea level. The site's existing drainage flows in a south/southeasterly direction toward Horse Creek, which is located about 135 feet south of the project site. The project site is surrounded by the following land uses:

- **North.** Undeveloped land is located north of the project site, beyond which lies New Horizons Way followed by undeveloped land within the Vaca Valley Business Park that is designated Business Park by the City of Vacaville General Plan (General Plan).
- **South.** Undeveloped land identified as APN 0133-120-540 and Horse Creek are located south of the project site. Beyond Horse Creek lies Horse Creek Drive, which is followed by undeveloped land that is within the Vaca Valley Business Park and designated Business Park by the City's General Plan. I-80 is approximately 0.25 mile south of the project site.
- **West.** Genentech's Vacaville Campus, which also includes an 8.9-megawatt solar facility, is located west of the project site, across Grassland Drive. I-505 is located approximately 0.5 mile west of the project site.
- **East.** Kaiser Permanente Medical Center is located east of the project site across East Akerly Drive.

1.7 LAND USE DESIGNATIONS AND ZONING

General Plan Land Use Designation

The project site is designated Business Park by the City's General Plan. According to the General Plan, the Business Park land use designation applies to sites in a landscaped setting for office centers, research-and-development facilities, and, under appropriate conditions, medical and institutional uses. Secondary uses may include limited industrial activities, small-scale warehousing and distribution operations, and limited retail sales accessory to these areas. Commercial uses and services for employees and businesses (e.g. delicatessens, childcare, dry cleaners, and branch banks) are required as a means of reducing trips and vehicle miles traveled. These uses must be centrally located and have adequate pedestrian access. The commercial uses and services must also be ancillary rather than primary uses, and there must be adequate public infrastructure to support the proposed use. Policy plans and specific plans may additionally allow for commercial development (City of Vacaville 2015a).

This designation is intended for parcels that would be developed as a unit. In addition, this designation is intended for lower intensity uses than the uses permitted in the Industrial Park and Technology Park designations, thereby reducing potential adverse impacts to adjacent development. The floor area ratio (FAR) is generally limited to 0.3 (City of Vacaville 2015a).

Zoning

The project site is within the City's Business Park zoning district, which provides for large office developments, research facilities, and medical and institutional uses, as well as high-tech industries, light manufacturing, warehousing, and distribution. Some commercial uses are also allowed, as well as some interim agricultural uses (City of Vacaville 2019a). Uses permitted in the Business Park zoning district include uses designated as a permitted

use by an applicable specific plan or policy plan, grazing or crop tree farming as an interim use, and telecommunication facilities.

Vaca Valley Business Park Policy Plan

The project site is located in Area A of the Vaca Valley Business Park Policy Plan. Area A is identified as an essential economic resource for the City as it is visible and accessible from I-505 and I-80. Uses permitted within this area include highway commercial, general commercial, light industrial, office and research facilities, hotels, and motels. The proposed project would comply with the requirements and standards listed in the Vaca Valley Business Park Policy Plan. There are no changes proposed to the plan. The plan is available at the Community Development Department or online at the following website: https://www.ci.vacaville.ca.us/home/showdocument?id=4413

The following goals and policies of the Vaca Valley Business Park Policy Plan are pertinent to the proposed project:

- The area shall be designed to contribute toward the phased growth of the Vaca Valley Business Park, and enhance the environmental quality, health and general welfare and the economic wellbeing of the City of Vacaville and its citizens, and to be an integral part of and complimentary to the overall community of the City of Vacaville in accordance with the policies of the General Plan.
- Uses shall be complimentary to and create the proper environment for the Vaca Valley Business Park.
- Plans and implementation shall ensure quality development and shall not be a burden to the City of Vacaville.
- Development of the property shall respect land use criteria such as the Noise Element of the Vacaville General Plan, the Airport Land Use Compatibility Plan dated May 1988 and its policies, and other applicable planning documents.
- Plans and development criteria shall be based on thorough consideration of the engineering, drainage, geologic or other potential hazards which may exist in the area.
- Development in the area will be mainly related to I-80/I-505 and the Vaca Valley Parkway triangle consistent with the General Plan.
- Development shall allow for the planned widening for Vaca Valley Parkway, the new Leisure Town Road/Vaca Valley Parkway/I-80 Interchange, and the Vaca Valley I-505 Interchange as the major traffic carriers in the area.
- The design characteristics of the area, including architecture and landscape architecture, shall meet design standards, which will provide a visual amenity to the area and to the City of Vacaville.
- Site planning, building, landscaping, and construction should consider feasible energy conservation techniques in consultation with Pacific Gas and Electric Company (PG&E) and utilize lifecycle costing, which considers initial costs, as well as long term operational costs.

1.8 CEQA AND PUBLIC AGENCY REVIEW

CEQA requires that project proponents disclose the significant impacts to the environment from proposed development projects. The intent of CEQA is to foster good planning and to consider environmental issues during the planning process. The City is the Lead Agency under CEQA for the preparation of this ISMND. The CEQA Guidelines (Section 21067) define the Lead Agency as, “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” Approval of the proposed project is

considered a public agency discretionary action, and therefore, the proposed project is subject to compliance with CEQA. The City has directed the preparation of an ISMND to comply with CEQA.

Stantec has prepared this document at the direction of the City. The purpose of this document is to disclose the environmental consequences of implementing the proposed project to decision-makers and the public. The public, City residents, and other local and state resource agencies will be given the opportunity to review and comment on this document during a 30-day public-review period. Comments received during the review period will be considered by the City prior to certification of this ISMND and project approval.

The public review period will commence on **April 3, 2020** and end on **May 4, 2020**, pursuant to CEQA Guidelines Section 15105. If you wish to send written comments (including via e-mail), they must be received by 5:00 p.m. on **May 4, 2020**. Written comments should be addressed to:

Peyman Behvand, City Planner
Community Development Department, Planning Division
650 Merchant Street
Vacaville, California 95688
Phone: (707) 449-5410
Email: peyman.behvand@cityofvacaville.com

The ISMND and supporting documents are available at the City of Vacaville Community Development Department, located at 650 Merchant Street, Vacaville, California 95688, and online at the following URL: http://bit.ly/Home2SuitesHotel

1.9 REQUIRED PERMITS AND APPROVALS

This ISMND would be used by the City as the Lead Agency to evaluate the potential environmental impacts of the proposed project. The applicant is requesting approval of a Tentative Parcel Map application. Other anticipated project approvals/actions may include but are not limited to the following:

- Conditional Use Permit to exceed Floor Area Ratio: City of Vacaville
- Adoption of the Mitigated Negative Declaration: City of Vacaville
- National Pollutant Discharge Elimination System Permit: Regional Water Quality Control Board

Other ministerial approvals, such as building-related permits and encroachment permits, are also anticipated. Additionally, all work related to improvements and project grading would be subject to the Vacaville Municipal Code, including the Zoning Ordinance, Building Code, and Fire Code.

1.10 SCOPE OF THIS INITIAL STUDY

As the Lead Agency under CEQA, the City is responsible for compliance with the environmental review process prescribed by the CEQA Guidelines. This initial study evaluates the potentially significant effects on the environment and identifies revisions in the project site plans (presented as mitigation measures) to mitigate the effects to a level at which no significant effect on the environment would occur. A complete project description is included in Section 2.0, Project Description. Project elements and environmental resources are analyzed in Section 3.0, Environmental Checklist and Environmental Evaluation. References are provided in Section 4.0, References.

The following technical studies were conducted and/or reviewed in preparing this ISMND: air quality modeling outputs and health risk assessment, biological resources assessment, cultural resources study, geotechnical study, and phase I. These studies and supporting data are included as appendices to this ISMND and referred to, where appropriate, throughout this document.

1.11 DOCUMENT ORGANIZATION

This ISMND is organized as follows:

Section 1.0: Introduction. This section introduces the proposed project and describes the purpose and organization of this document.

Section 2.0: Project Description. This section describes the purpose and need for the proposed project, identifies project objectives, and provides a detailed description of the project.

Section 3.0: Environmental Checklist and Environmental Evaluation. This section presents an analysis of the range of environmental issues identified in the CEQA Environmental Checklist and determines for each topic whether the proposed project would result in no impact, a less than significant impact, a less than significant impact with mitigation incorporated, or a potentially significant impact. If impacts are determined to be potentially significant after incorporation of applicable mitigation measures, an Environmental Impact Report (EIR) would be required. For this project, however, mitigation measures have been incorporated, where needed, that would reduce all potentially significant impacts to a less than significant level.

Section 4.0: References. This section lists the references used in preparing this ISMND.

Section 5.0: List of Preparers. This section identifies the report preparers.



2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The project site consists of APN 0133-120-380 within the Vaca Valley Business Park Policy Plan area at the intersection of New Horizons Way and East Akerly Drive (Figure 2). The applicant is proposing to subdivide this 3.41-acre parcel and construct a four-story hotel on approximately 2.26 acres. The proposed hotel would include 107 guest rooms and other onsite guest amenity areas such as an indoor swimming pool, fitness room, and dining/community gathering room. The proposed project would also provide 128 onsite surface parking spaces and approximately 30,959 square feet of landscaping and include installation of utilities (Figure 3).

2.2 PROJECT COMPONENTS

2.2.1 Hotel Building

The proposed project would involve the development of a four-story hotel building with up to 107 guest rooms. The proposed building would be approximately 43 feet in height and have a total building area of 56,651 square feet. The proposed hotel building would be constructed on 2.26 acres and have a FAR of 0.57.

Hotel guest rooms would be provided on the first through fourth floors. The first floor would be approximately 15,407 square feet and would include 17 rooms consisting of 10 queen studio rooms, 5 accessible queen studio rooms, 1 queen one-bedroom, and 1 accessible queen one-bedroom. The first floor would also include the main lobby reception area, fitness room, dining/community gathering area, indoor pool, guest laundry, and employee office. The second, third, and fourth floors would each have the same characteristics, be approximately 13,784 square feet, and would have 30 rooms consisting of 21 queen studio rooms, 6 accessible queen studio rooms, 1 queen one-bedroom, and 1 accessible queen one-bedroom. Figures 4 and 5 show each floor plan, and the building elevations are provided in Figure 6.

The main entrance and exit would be provided on the north side of the building. Additional exits would be provided on the west and south sides of the building. These exits would be secured and only accessible to hotel guests. Access to each floor would be available from the elevators on the east side of the building. Stairwells would also be provided on the east and west sides of the building to access each floor.

2.2.2 Site Access, Circulation, and Parking

The project site plan identifies two 26-foot-wide driveways at the north and south ends of the project site on East Akerly Drive. Vehicles would be able to enter or exit the project site from either driveway on East Akerly Drive.

The proposed project would provide 128 surface parking spaces consisting of 66 standard parking spaces, 62 compact spaces, 5 accessible spaces, and 1 van parking space. The proposed project would reserve 10 parking spaces for clean air vehicles, and 8 parking spaces would be equipped with electric vehicle charging stations. The proposed project would also install two bicycle racks near the hotel's south building entrance. Each bicycle rack would accommodate at least five bicycles as required by Chapter 14.09.128 of the Vacaville Municipal Code.

Site improvements consisting of curbs, gutters, sidewalks for pedestrian access, signing, lighting, and striping would be installed along East Akerly Drive and throughout the project site.

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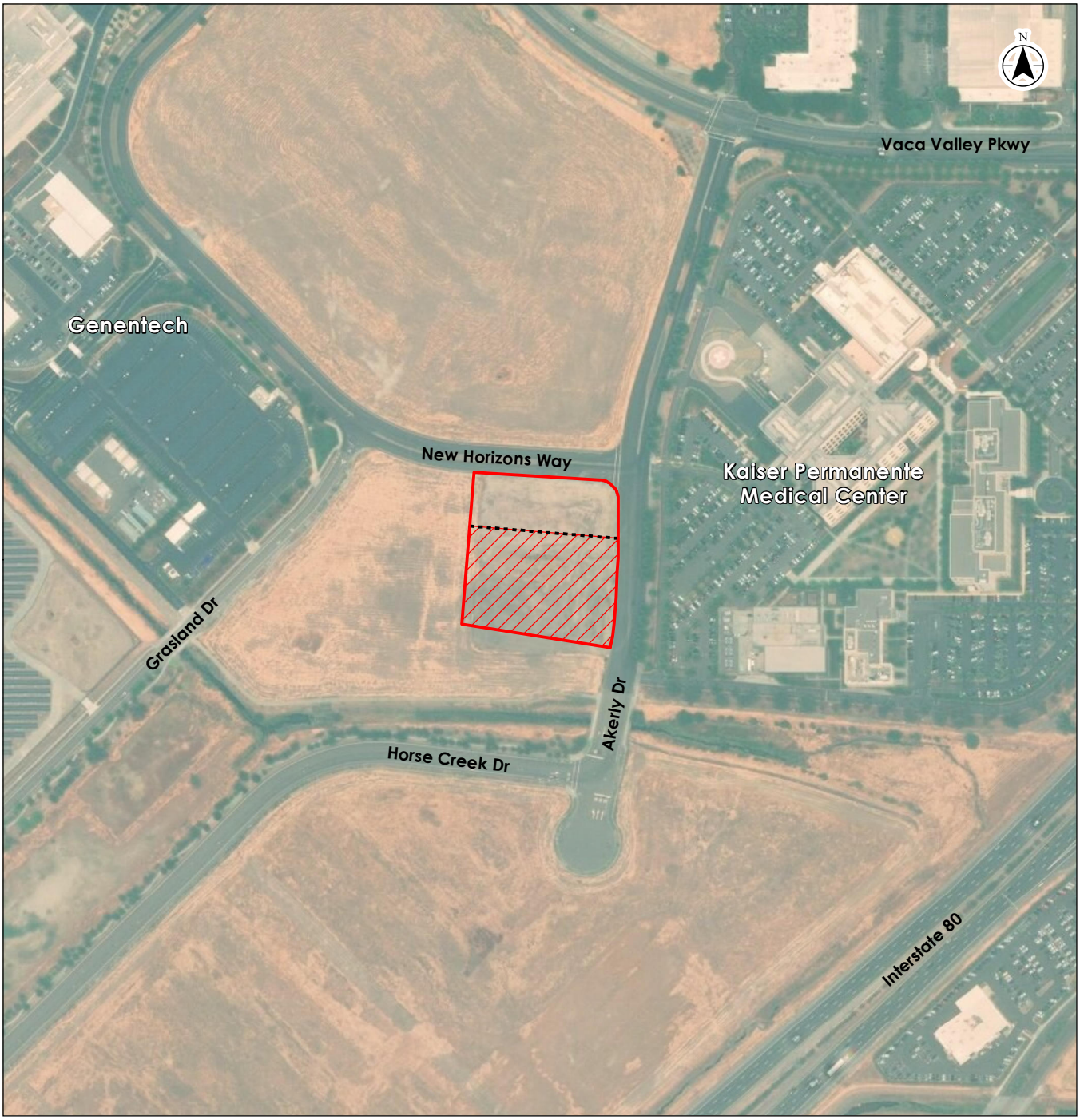

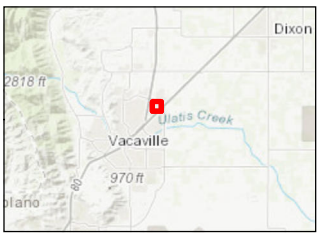

Existing Parcel Boundary

Proposed Parcel Subdivision

Project Site

0 250 500 Feet

1:4,800 (at original document size of 8.5x11)

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Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Base features produced under license with the Ontario

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Project Location
Vacaville, California

Prepared by PG on 2019-09-04
Technical Review by KJ on 2019-09-04

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
2

Title
Project Site Location

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Source: Iyers & Associates 2019

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Stantec

Project Location
Vacaville, California

Prepared by PG on 2019-08-27
TR by KJ on 2019-08-28

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
3

Title
Tentative Parcel Map

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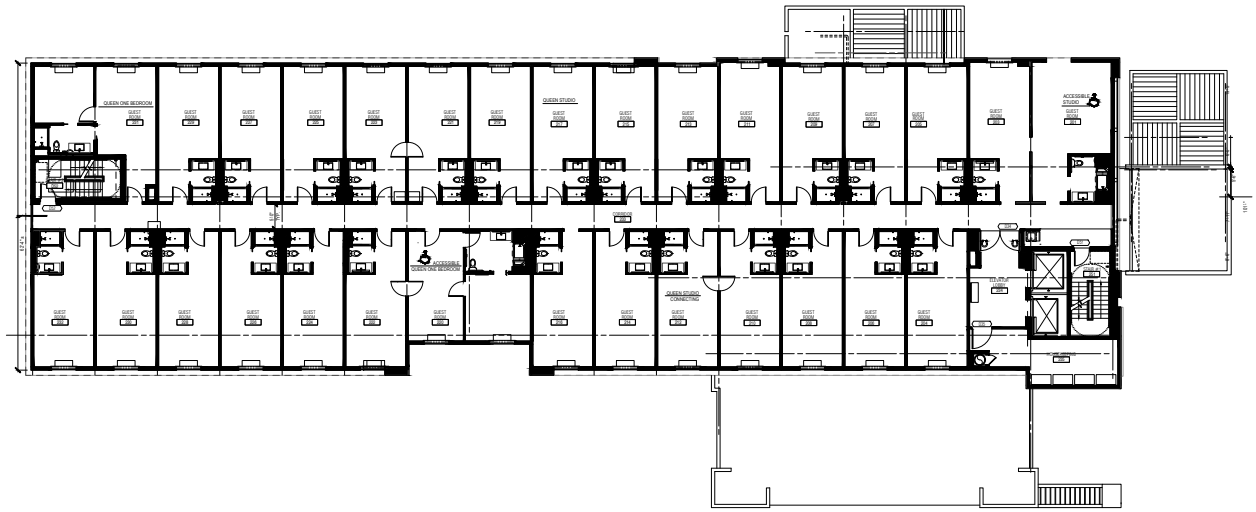
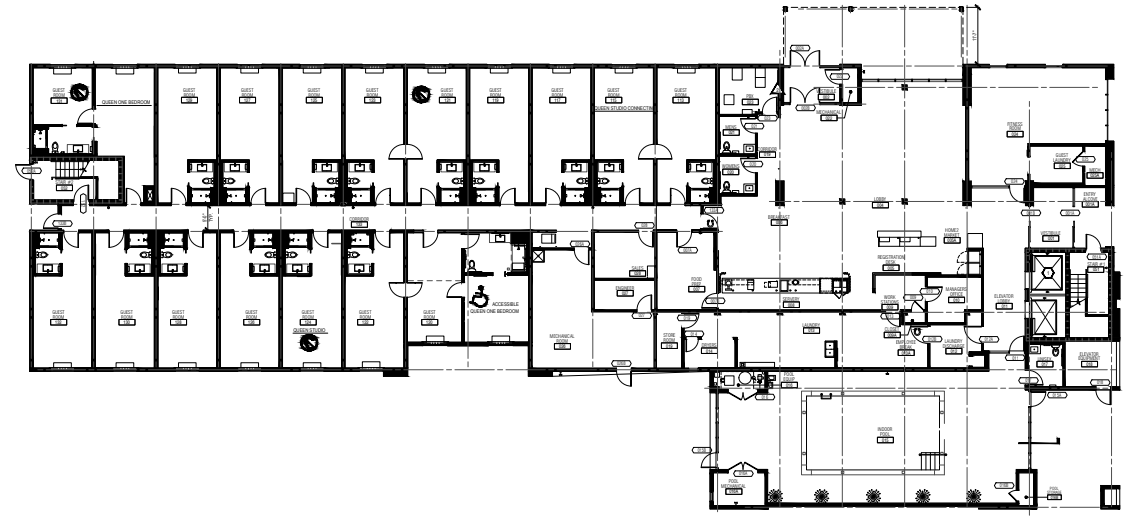


1B SECOND FLOOR PLAN NUMBER OF GUEST ROOM = 30/FLOOR
SCALE: 3/32" =1'0" AREA = 13,784.00 SQFT/ FLOOR



1A FIRST FLOOR PLAN NUMBER OF GUEST ROOM = 17/FLOOR
SCALE: 3/32" =1'0" AREA = 15,407.00 SQFT/ FLOOR

Source: Iyers & Associates 2019

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
4

Title
First and Second Floor Plans

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1B FOURTH FLOOR PLAN
SCALE: 3/32" =1'0"

NUMBER OF GUEST ROOM = 30/FLOOR
AREA = 13,784.00 SQFT/ FLOOR



1A THIRD FLOOR PLAN
SCALE: 3/32" =1'0"

NUMBER OF GUEST ROOM = 30/FLOOR
AREA = 13,784.00 SQFT/ FLOOR

Source: Iyers & Associates 2019

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
5

Title
Third and Fourth Floor Plans

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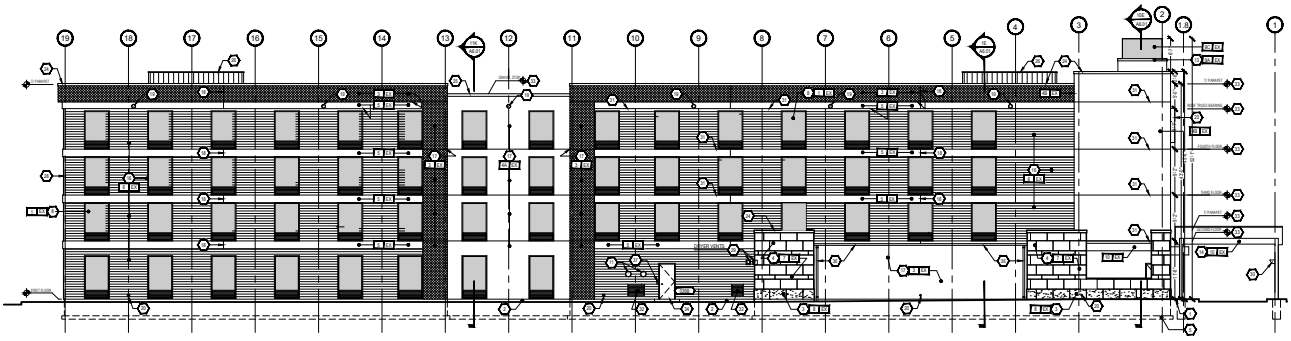
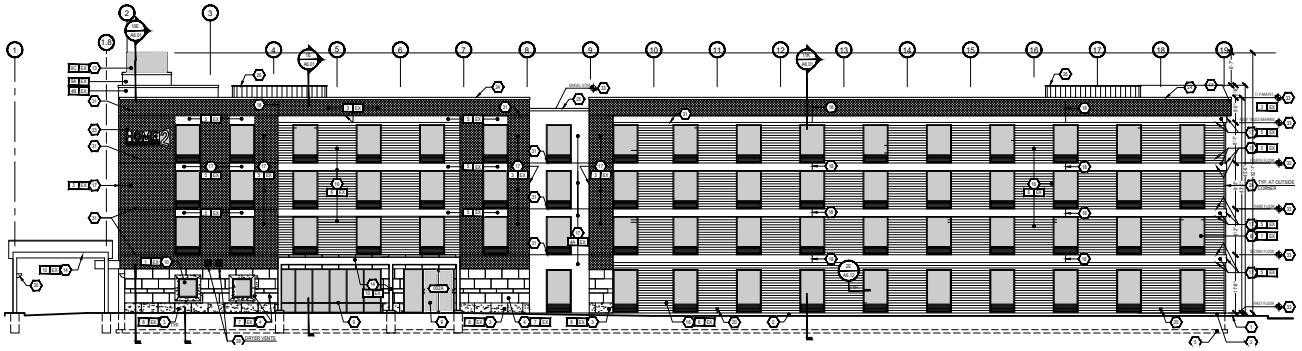


1F EXTERIOR ELEVATION - REAR
SCALE: 3/32" =1'0"



1A EXTERIOR ELEVATION - FRONT
SCALE: 3/32" =1'0"

Source: Iyers & Associates 2019

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
6

Title
Elevation Plans

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2.2.3 Landscaping

The proposed project would provide approximately 30,959 square feet of landscaping around the site perimeter and within the surface parking area (Figure 7). Landscaping design and installation for the proposed project would be required to conform to the development criteria of the Vaca Valley Business Park Policy Plan and the City's Water Efficient Landscape Ordinance (Chapter 14.27 of the Vacaville Municipal Code).

2.2.4 Lighting

The proposed project would provide exterior lighting in the new parking lot and in areas that highlight the building's entrances, walkways, and landscaping features. Parking lot lighting would include standard parking lot fixtures up to 20 feet in height that would be shielded to reduce light spill or glare into surrounding buildings in accordance with Chapter 14.09.127.110 of the Vacaville Municipal Code. Additionally, all exterior lighting would be designed to meet safety requirements and energy conservations needs as required by the Vaca Valley Business Park Policy Plan. The applicant would submit a Photometric Plan to the City during the design review phase to ensure that the proposed project complies with the City requirements.

2.2.5 Utilities

Water

The proposed project would connect to the existing 18-inch City waterline. A new water service lateral would be installed, and the size of the double-detector check valve would match the size of the proposed water service. The Vaca Valley Business Park Policy Plan determined that adequate offsite water capacity would be available to serve the Policy Plan area based on the maximum water demand of 3,000 gallons per day (gpd) per acre (City of Vacaville 2017).

The proposed project is expected to demand 250 gpd for each room. The proposed project would include 107 rooms. Assuming the proposed hotel is at capacity it would require a total water use of approximately 26,700 gpd of potable water, or approximately 11,814 gpd/acre (26,700 gpd / 2.26 acres)

Wastewater

The proposed project would connect to the existing 6-inch sanitary sewer lateral stub to connect to the existing 15-inch sanitary sewer main in East Akerly Drive (Figure 8). The project site is within the City's Lower Northeast Sector Assessment District. A sewer master plan was prepared for this area, which determined wastewater capacity for each parcel in the Vaca Valley Business Park. The Northeast Sector Sewer Master Plan allocated 4,000 gpd/acre for the project site, for a total of 13,640 gpd (City of Vacaville 2009, 2020).

Based on land use and standard demand factors, the proposed project is expected to generate approximately 14,872 gpd of wastewater, which is 1,232 gpd greater than the planned capacity (City of Vacaville 2020). In the sewer capacity memorandum provided by the City's Utilities Department for the proposed project, it states that the Northeast Sector Sewer Master Plan included set amounts of sewer capacity for use in the Vaca Valley Business Park region, which included 24,200 gpd of unallocated sewer capacity set aside for the City to provide additional capacity to one or more large water users on a case-by-case basis. All of this additional sewer capacity remains available for allocation; thus, 1,232 gpd of this available capacity would be allocated to the project site (City of Vacaville 2020). The Sewer Capacity Transfer Memorandum provided by the City's Utilities Department is provided in Appendix A.

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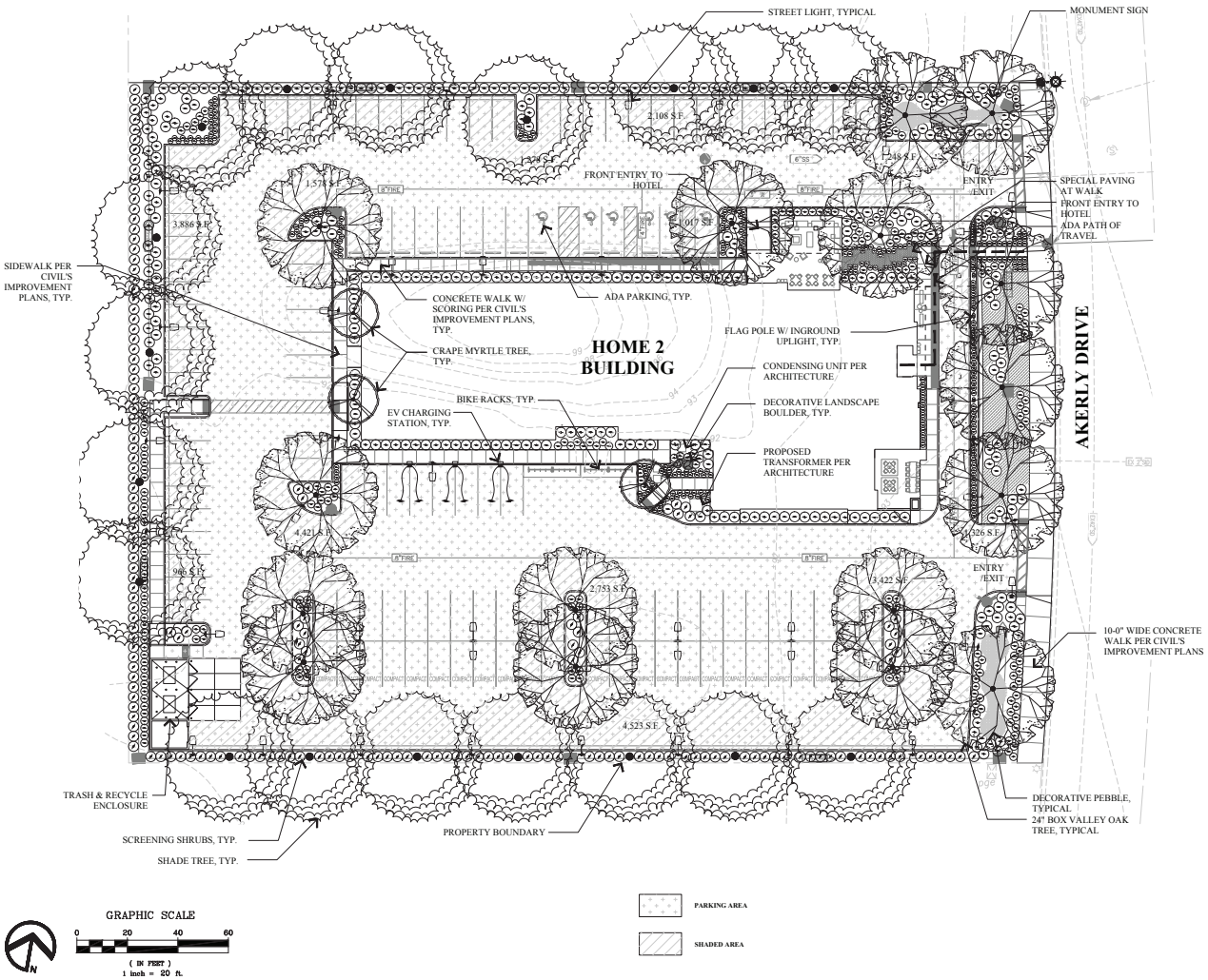

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
7

Title
Landscape Plan

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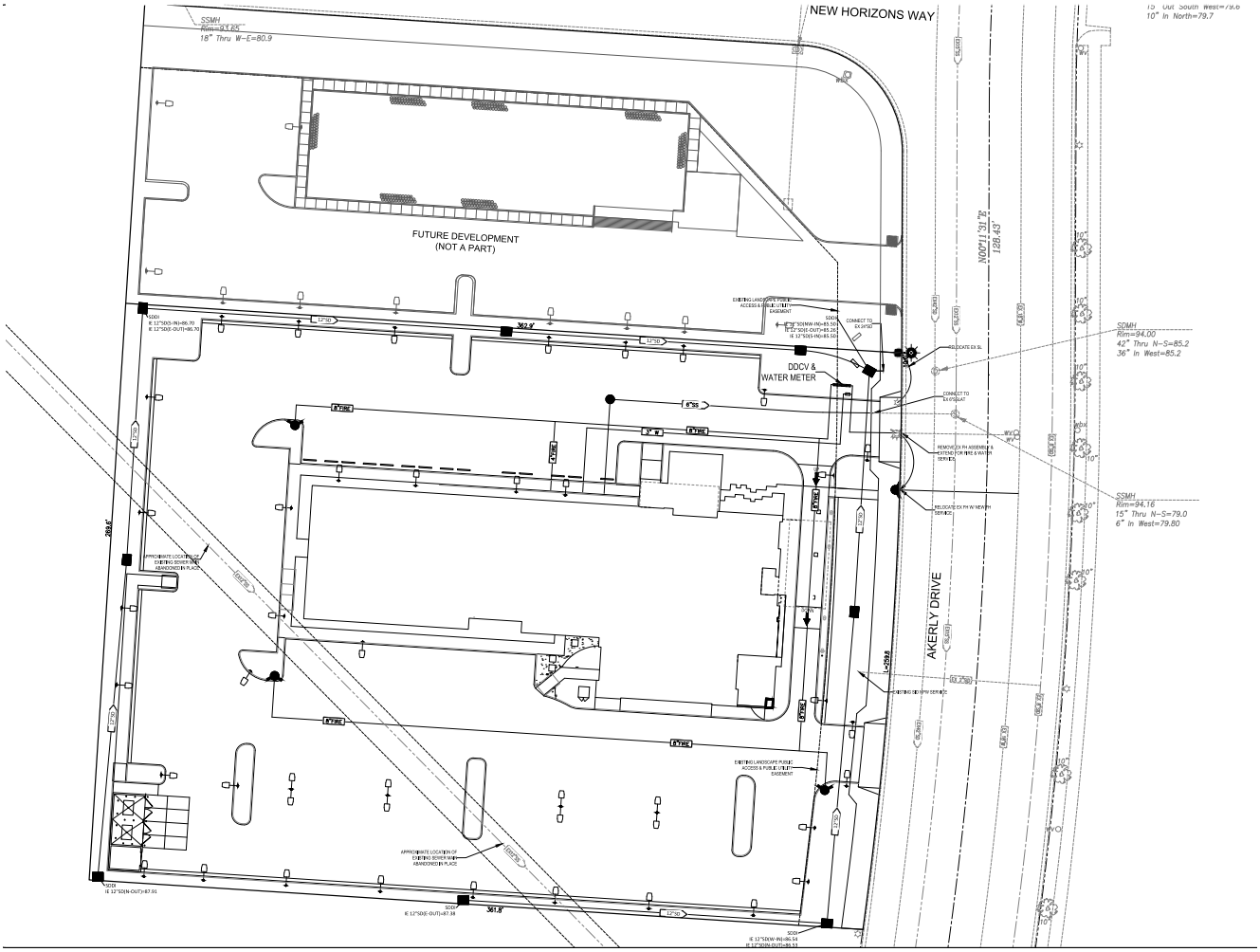

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
8

Title
Utility Plan

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Stormwater Treatment

The proposed project would install a new 12-inch storm drain along the property boundary and would connect to the existing 24-inch storm drain along East Akerly Drive. The proposed project would create approximately 78,253 square feet of new impervious surface; it would also include approximately 17,356 square feet of pervious surface consisting of landscaping and bioswales along the project site boundary (Figure 9). The bioswales would collect impervious surface runoff prior to entering the piped storm drain system.

Electricity and Natural Gas

Pacific Gas and Electric Company provides electricity and natural gas service to the project site. Electrical and gas connections would be made with existing facilities located onsite.

2.3 PROJECT CONSTRUCTION

2.3.1 Construction Schedule

It is anticipated that project construction would take approximately 12 months to complete, starting in August 2020 and ending in August 2021. The proposed project would require up to 15 workers during the peak construction phase. It is anticipated that the construction workforce would be available from nearby areas.

Project construction and grading activities would be consistent with the Vacaville Municipal Code and would not occur between dusk (one-half hour after sunset) and 7:00 AM, Monday through Saturday. No grading or construction activities would occur on Sundays or holidays.

2.3.2 Construction Equipment, Access, and Staging Areas

The proposed project would require the use of heavy construction equipment for site work and construction of the hotel building. Construction equipment would include but not be limited to scrapers, water trucks, grading blades, motor graders, forklifts, skip loaders, backhoes, excavators, and loaders. Project construction equipment and materials would be stored onsite or on the undeveloped area north of the project site adjacent to New Horizons Way. Construction activities are anticipated to be confined to the project site, and no road closures or detours are anticipated.

2.3.3 Construction Activities

Construction activities associated with the proposed project would include site clearing, grading, utility connections (e.g., new lateral connections to the existing water, sewer, and storm drain mains in East Akerly Drive), building construction, frontage improvements (e.g., new curb, gutter, sidewalk and driveway construction), and landscaping on the site.

Construction activities would involve grading of the entire project site and the permanent disturbance of the 2.26-acre site. The estimated amount of cut and fill during project construction would be 3,000 and 1,000 cubic yards, respectively. The proposed project is not expected to export soil offsite or import soil onsite during construction. The proposed project would result in approximately 78,253 square feet of impervious area.

2.4 PROJECT OPERATION

Operation of the proposed project would require up to five full-time employees. Based on an average of two guests per hotel room, the proposed project would generate up to 214 guests at maximum capacity. It is expected that the proposed project would operate 24-hours a day, Monday through Sunday.

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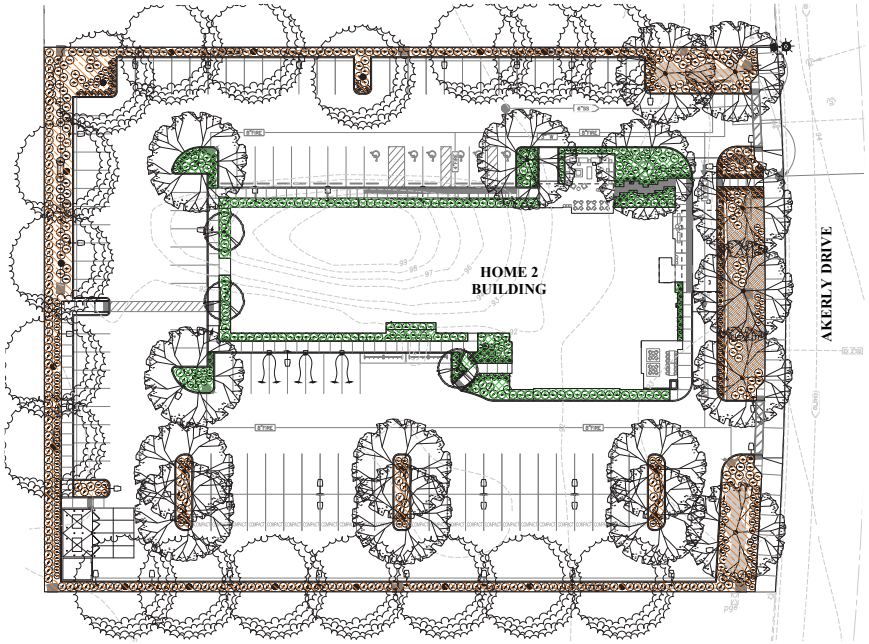

HYDROZONE INFORMATION TABLE

SYMBOL	DESCRIPTION	IWWB METHOD	AREA	% OF LANDSCAPE AREA
ZONE/VALVE 1	PROPOSED TREES LOW WATER USE	BUBBLERS	294 SF	1%
ZONE/VALVE 2	PERIMETER SHRUBS LOW WATER USE	DRIP	12,679 SF	73%
ZONE/VALVE 3	SHRUBS AROUND BUILDING MEDIUM WATER USE	DRIP	4,383 SF	26%
		TOTAL	17,356 SF	100.0%

WATER USE CALCULATIONS:

THE MAXIMUM APPLIED WATER ALLOWANCE (MAWA) IN GALLONS PER YEAR IS BASE ON THE FOLLOWING FORMULA:

MAWA = (ETo)(0.62)(0.55 X LA)

THE ESTIMATED TOTAL WATER USE (ETWU) IS THE SUM TOTAL OF ESTIMATED WATER USE FOR EACH HYDROZONE IN GALLONS PER YEAR AND IS BASED ON THE FOLLOWING FORMULA:

$$ETWU = \frac{(ETo)(0.62)(PF \times HA)}{IE} + SLA$$

ETo = REFERENCE EVAPOTRANSPIRATION (INCHES PER YEAR)
LA = LANDSCAPE AREA
HA = HYDROZONE AREA (SQUARE FEET)
PF = PLANT FACTOR (SEE TABLE)
IE = IRRIGATION EFFICIENCY (0.75)
0.62 = ET ADJUSTMENT FACTOR
0.62 = CONVERSION FACTOR (TO GALLONS)

REFERENCE EVAPOTRANSPIRATION (ETo) = 47.0

MAXIMUM APPLIED WATER ALLOWANCE:

MAWA = 147.01 X 10,621 X 10.55 X 17,356 = 353,067 GAL/YR

ESTIMATED WATER USE:

ETWU = 147.01 X 10,621 X (0.20 X 12,679) = 106,488 GAL/YR
0.71

ETWU = 147.01 X 10,621 X (0.40 X 4,383) = 71,955 GAL/YR
0.71

ESTIMATED TOTAL WATER USE = 106,488 + 71,955 = 178,443 GAL/YR

Plant Factor Typical Ranges (PF)

Low Water Use	0.0-0.3
Medium Water Use	0.3-0.6
High Water Use	0.4-1.0

GRAPHIC SCALE
0 20 40 60
(IN FEET)
1 inch = 20 ft.

Source: Iyers & Associates 2019

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
9

Title
Stormwater - Hydrozone Areas

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3.0 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

The environmental factors checked below would be potentially affected by this project, involving at least one impact that requires mitigation to reduce the impact from "Potentially Significant" to "Less Than Significant" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology and Soils	☐ Greenhouse Gases	☒ Hazards and Hazardous Materials
☒ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☒ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Evaluation of Environmental Impacts

Section 3.0, Environmental Checklist and Environmental Evaluation, presents the environmental checklist form found in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures, if needed.

For the checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant and for which mitigation has not been identified. If any potentially significant impacts are identified, an EIR must be prepared. An ISMND cannot be used if there are potentially significant impacts that cannot be mitigated.

Less Than Significant with Mitigation Incorporated: This designation applies when applicable and feasible mitigation measures previously identified in prior applicable EIRs or in the General Plan and Energy Conservation Action Strategy Environmental Impact Report (General Plan EIR) have reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact" and, pursuant to Section 21155.2 of the PRC, those measures are incorporated into the ISMND.

This designation also applies when the incorporation of new project-specific mitigation measures not previously identified in prior applicable EIRs or in the General Plan EIR have reduced an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact".

Less Than Significant Impact: Any impact that would not be considered significant under CEQA, relative to existing standards.

No Impact: The proposed project would not have any impact.

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3.1 AESTHETICS

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c)	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, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1 Environmental Setting

Visual Character of the Project Site

The 2.26-acre project site consists of an undeveloped parcel within the Vaca Valley Business Park Policy Plan area. The Vaca Valley Business Park Policy Plan area is in northeast Vacaville and is bordered by I-505 to the west, I-80 to the south and east, and Vaca Valley Parkway to the north. The policy plan area is partially developed, with a mix of uses, including Genentech's Vacaville Campus and 8.9-megawatt solar facility, the Kaiser Permanente Medical Center, a membership organization facility, and office buildings. Horse Creek extends through the central portion of the policy plan area and is about 135 feet south of the project site. The existing developments range from two to four stories tall and are primarily adjacent to the I-505 and I-80 corridors. Some streetscape improvements have been made within the policy plan area with the addition of new sidewalks, landscaping, and lighting.

Scenic Resources and Corridors

Most of the City's scenic resources are associated with open space, natural resources, and agricultural uses. Such areas include riparian corridors, views of the rural and undeveloped lands surrounding the City, Vacaville's hillside areas, and views of the ridgelines such as the Vaca Mountains and English Hills (City of Vacaville 2015a). The Vaca Mountains and English Hills are outside of the Vacaville city limits, approximately 5 to 8 miles west of the project site. Public views of these hillsides are intermittent throughout the City and are partially or fully blocked by intervening existing buildings and trees in many areas. The City does not contain any locally or state-designated scenic highways (City of Vacaville 2015a).

Light and Glare Conditions

The project site is undeveloped, and therefore, no substantial light and glare sources exist onsite. Nighttime lighting immediately surrounding the project site consists of street lighting, parking lot lighting, vehicle headlights on the adjacent streets and highways, and exterior lighting associated with the nearby developments. There are no electrical signs, billboards, or flashing or oscillating light sources in the project area.

3.1.2 Methodology

Analysis of the proposed project's visual impacts is based on an evaluation of the changes to the existing visual resources that would result from implementation of the proposed project. In determining the extent and implications of the visual changes, consideration was given to the existing visual quality of the affected environment; specific changes to the visual character and quality of the affected environment resulting from implementation of the proposed project; the extent to which the affected environment contains places or features that provide unique visual experiences or that have been designated in plans and policies for protection or special consideration; and the sensitivity of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities that would be affected by implementation of the proposed project. The existing setting was based on review of documents pertaining to the project site, including the General Plan and the Vaca Valley Business Park Policy Plan.

3.1.3 Environmental Impact Analysis

This section discusses the potential impacts on aesthetics associated with the proposed project and provides mitigation measures where necessary.

Impact AES-1 Have a substantial adverse effect on a scenic vista?

Impact Analysis

The General Plan indicates that there are no officially designated scenic vistas in the City but considers westward views of the Vaca Mountains and English Hills as scenic vistas (City of Vacaville 2015a). The project site is within the Vaca Valley Business Park Policy Plan area, an urbanized area designated by the General Plan for development of a business park that consists of a mix of commercial, office, research, and medical uses. The Vaca Mountains and English Hills are approximately 5 to 8 miles west of the project site. Similar to other parts of the City, westward views of these ridgelines are available from the project site; however, these views are partially obscured by existing development and vegetation. The proposed project would construct a new four-story hotel that is approximately 43 feet tall. The height of the proposed hotel building would be comparable to existing nearby development, which is up to four stories tall. Additionally, the height of the proposed hotel building would be consistent with the site development standards of the Vaca Valley Business Park Policy Plan, which allows development up to 70 feet tall. Further, given the amount of separation between the project site and surrounding uses, westward views of the Vaca Mountains and English Hills would remain partially visible. As such, construction of the proposed project would not further limit westward views of the Vaca Mountains or the English Hills as compared to existing conditions and impacts to scenic vistas would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Impact Analysis
There are no state-designated scenic highways in the City (City of Vacaville 2015a). The project site is undeveloped and does not contain vegetation, rock outcroppings, or historic buildings that are identified as scenic resources by the General Plan. Therefore, the proposed project would have no impact on scenic resources within a State scenic highway.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact AES-3 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, would the project conflict with applicable zoning and other regulations governing scenic quality?

Impact Analysis
The project site is in an urbanized area, and therefore, this analysis focuses on whether the proposed project would conflict with applicable zoning and other regulations governing scenic quality.

The project site is within the Vaca Valley Business Park Policy Plan and designated as Business Park by the General Plan and zoning code. The Vaca Valley Business Park Policy Plan area is intended to be developed as a business park that consists of highway commercial, general commercial, light industrial, office and research facilities, hotels, motels, recreation facilities, membership organizations, and a medical complex. The proposed project would construct a four-story hotel with 107 guest rooms and other onsite guest amenity areas such as an indoor swimming pool, fitness room, and dining/community gathering room. The proposed project is consistent with the allowed uses identified by the Vaca Valley Business Park Policy Plan, as well as the Business Park land use designation and zoning district. The proposed hotel building would be approximately 43 feet in height and would be consistent with the site development standards of the Vaca Valley Business Park Policy Plan, which allows for development up to 70 feet in height. The proposed project would also incorporate approximately 30,959 square feet of landscaping around the site perimeter and within the surface parking area, in accordance with the landscaping requirements of the Vaca Valley Business Park Policy Plan. The project design would be reviewed during the City's design review process in accordance with Chapter 14.09.131 of the Vacaville Municipal Code to ensure that it is compatible with surrounding development. As such, the proposed project would not conflict with applicable zoning or other regulations governing scenic quality, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact Analysis

The project site is undeveloped and does not currently contain any onsite sources of light or glare. However, there are existing sources of light and glare from the surrounding development and roadways consisting of exterior building lighting; parking lot lighting; street lighting along East Akerly Drive, New Horizons Way, and Horse Creek Drive; and headlights from vehicles driving on I-505, I-80, and other surrounding roadways.

The proposed project would include new sources of nighttime lighting at the project site such as exterior lighting in the new surface parking lot; wayfinding lighting in areas that highlight the building's entrances, walkways, and landscaping features; exterior safety lighting; and illumination from within the proposed hotel such as lights from within guest rooms and lobbies that would be visible to an observer. The proposed hotel building would be constructed of concrete, wood, and stucco materials and would not use substantial amounts of reflective glass that would increase glare in the surrounding area. Parking lot lighting for safety would consist of standard parking lot pole fixtures up to 20 feet in height. All lighting would be shielded to reduce glare and light spillover onto surrounding properties in accordance with Chapter 14.09.127.110 of the Vacaville Municipal Code. Additionally, all exterior lighting would be designed to meet safety requirements and energy conservation needs as required by the Vaca Valley Business Park Policy Plan. The applicant would submit a Photometric Plan to the city during the design review phase to ensure that the proposed project complies with Chapter 14.09.127.110 of the Vacaville Municipal Code. As such, compliance with the Vacaville Municipal Code and the site development standards of the Vaca Valley Business Park Policy Plan would ensure that light and glare impacts associated with the proposed project are less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.2 AGRICULTURE AND FORESTRY RESOURCES

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forestland (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 forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

The California Department of Conservation (DOC) administers the Farmland Mapping and Monitoring Program (FMMP), California's statewide agricultural land inventory. As discussed in the General Plan, the City traditionally contained land used for grazing, orchards, field, and row crops and has since become urbanized and diversified. Therefore, most agricultural land exists immediately outside of the City limits, to the east, west, and south (City of Vacaville 2015a).

The project site is undeveloped and located within the Vaca Valley Business Park Policy Plan. The General Plan has designated the Vaca Valley Business Park Policy Plan area for development of commercial, office, research, and medical uses. According to the DOC Important Farmland Finder Map and the General Plan, the south portion of the Vaca Valley Business Park Policy Plan area, including the project site, is classified as grazing land (DOC 2016, City of Vacaville 2015a). Grazing land is defined as land on which the existing vegetation is suited to the grazing of livestock (DOC 2016).

3.2.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, the DOC Important Farmland Map, and Solano County 2013-2014 Williamson Act Map.

3.2.3 Environmental Impact Analysis

This section discusses potential impacts on agriculture and forestry resources associated with the proposed project and provides mitigation measures where necessary.

Impact AG-1 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?

Impact Analysis

The project site is within the Vaca Valley Business Park Policy Plan, an area designated by the General Plan for the development of commercial, office, research, and medical uses. According to the DOC Important Farmland Finder Map and the General Plan, the project site is classified as grazing land, which contains existing vegetation suited for grazing of livestock (DOC 2016, City of Vacaville 2015a). The project site does not contain prime, unique, or farmland of statewide importance. As such, the proposed project would not result in the conversion of prime, unique, or farmland of statewide importance. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-2 Conflict with existing zoning for agricultural use or a Williamson Act contract?

Impact Analysis

The project site is within the Business Park zoning district, which allows for large office developments, research facilities, and medical and institutional uses, as well as high-tech industries, light manufacturing, warehousing, and distribution. Uses permitted in the Business Park zoning district also include uses designated as a permitted use by an applicable specific plan or policy plan, grazing or crop tree farming as an interim use, and telecommunication facilities. The proposed project would develop a four-story hotel and would be consistent with the uses permitted within the Business Park zoning district and the Vaca Valley Business Park Policy Plan. Additionally, the project site does not contain lands that are protected by a Williamson Act contract. Therefore, the proposed project would not conflict with the site's existing zoning or with a Williamson Act contract. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-3 Conflict with existing zoning for, or cause rezoning of, forestland (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])?

Impact Analysis

The project site does not contain forestland (as defined in PRC Section 12220[g]), or timberland (as defined by PRC Section 4526). Furthermore, the project site is not zoned Timberland Production (as defined by Government Code section 51104[g]). The project site is zoned Business Park and would not be rezoned to allow forestland or timberland production. As such, the proposed project would not convert forestland or timberland to a non-agricultural use, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-4 Result in the loss of forestland or conversion of forestland to non-forest use?

Impact Analysis

The project site is located within the Vaca Valley Business Park Policy Plan area. There are no forestland resources on the project site or in the Vaca Valley Business Park Policy Plan area. Therefore, the proposed project would not result in the loss of forestland or conversion of forestland to non-forest use. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

Impact Analysis

The project site does not contain prime, unique, or farmland of statewide importance and does not contain lands protected by a Williamson Act contract. The project site is not zoned for forestland or timberland production and would not be rezoned for agricultural use. The project site is classified as grazing land, which contains existing vegetation suited for grazing of livestock (DOC 2016, City of Vacaville 2015a). However, grazing or crop tree farming is allowed in the Business Park zoning district as an interim use. The proposed project would develop a four-story hotel and would be consistent with the type of uses permitted in the Business Park zoning district and Vaca Valley

Business Park Policy Plan. Therefore, the proposed project would not result in the conversion of farmland or forestland to a non-agricultural use. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.3 AIR QUALITY

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Environmental Setting

The proposed project is located within the Sacramento Valley Air Basin (SVAB). SVAB encompasses the northern California central valley from Shasta County to northeastern Solano County. The proposed project is located in northern Solano County within the SVAB and is considered to be within the Sacramento region. The local air pollution control agency with jurisdiction over the proposed project is the Yolo-Solano Air Quality Management District (YSAQMD). The Bay Area Air Quality Management District (BAAQMD) boundaries are located approximately 4.5 miles to the south and 8 miles west of the project site.

Solano County is in nonattainment of the State ozone and particulate matter (PM) 10 microns and less in diameter (PM_{10}) and the federal 8-hour ozone and particulate matter 2.5 microns and less in diameter ($PM_{2.5}$) standard. The County is unclassified for the state $PM_{2.5}$ and federal PM_{10}. An unclassified designation indicates that air quality and other relevant information is insufficient to determine whether the area is attainment or nonattainment (CARB 2017a). According to the YSAQMD, pollutants of concern within the district are ozone, PM (PM_{10} and $PM_{2.5}$), and Toxic Air Contaminants (TACs) (YSAQMD 2015).

Ozone is not emitted directly into the air; rather, it is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and Nitrogen Oxides (NOx), react in the atmosphere in the presence of sunlight to form ozone. Significant ozone formation generally requires an adequate amount of ozone precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. The conditions for ozone formation are prevalent during the summer when thermal inversions are most likely to occur (YSAQMD 2015).

PM levels tend to be highest during the winter months when the meteorological conditions favor the accumulation of localized pollutants. This occurs when relatively low inversion levels trap pollutants near the ground and concentrate the pollution (YSAQMD 2015).

Toxic air contaminants are generally caused through anthropogenic sources, including mobile sources (transportation), stationary sources (factories, refineries, power plants) and indoor sources (building and cleaning materials) (YSAQMD 2015).

Toxic Air Contaminants

A toxic air contaminant is an air pollutant not included in the California Ambient Air Quality Standards, but TACs are considered hazardous to human health. Toxic air contaminants are defined by the California Air Resources Board (CARB) as those pollutants that, "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health."

The health effects associated with TACs are generally assessed locally rather than regionally. Toxic air contaminants can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; TACs can also cause short-term acute effects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. For evaluation purposes, TACs are separated into carcinogens and noncarcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and the cancer risk is expressed as excess cancer cases per one million exposed individuals (typically over a lifetime of exposure).

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases: gas and particle. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines, such as the on-road diesel engines of trucks, buses, and cars, and off-road diesel engines that include locomotives, marine vessels, and heavy-duty equipment (CARB 2019a).

Asbestos

Asbestos is a fibrous mineral that both naturally occurs in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated either based on its natural widespread occurrence or in its use as a building material. In the initial Asbestos National Emission Standards for Hazardous Air Pollutants rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed (friable) and those materials that were unlikely to result in significant fiber release (non-friable). The U.S. Environmental Protection Agency (EPA) has since determined that, when severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers. Asbestos has been banned from many building materials under the Toxic Substances Control Act, the Clean Air Act, and the Consumer Product Safety Act. Naturally occurring asbestos (NOA) is known to occur in many parts of California and is commonly associated with ultramafic or serpentinite rock. According to the USGS Geologic Map, the proposed project is not located in an area known to contain ultramafic or serpentine rock (USGS 2011). There is one known strain of ultramafic rock in Solano County, approximately 23 miles to the southwest of the project site near Green Valley, CA (USGS 2011).

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source,

and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The project site would not be considered a sensitive receptor. The closest sensitive receptors to the project site are the Kaiser Permanente Medical Center the closest building of which is located approximately 285 feet to the east of the project site as well as existing residences 0.4-mile northeast of the project site.

Air Quality Standards

According to the CARB, "Federal clean air laws require areas with unhealthy levels of ozone, inhalable PM, carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) to develop plans, known as State Implementation Plans (SIPs). A SIP is prepared by each state describing existing air quality conditions and measures that would be followed to attain and maintain federal standards. The 1990 amendments to the federal Coalition for Clean Air (CCA) set deadlines for attainment based on the severity of an area's air pollution problem" (CARB 2017b).

The SIP for the State of California is administered by the CARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for each regional air district. A SIP is prepared by the regional air district and sent to the CARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The CARB also administers the California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 State air pollutants are the six federal standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The federal and State ambient air quality standards are summarized in Table 3.3-1.

Table 3.3-1: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.070ppm (137 µg/m^3)	
Respirable Particulate Matter	24 Hour	50 µg/m^3	150 µg/m3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	—	
Fine Particulate Matter	24 Hour	—	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	
Carbon Monoxide	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)	—	—
Nitrogen	1 Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Dioxide	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
Lead	30-Day Average	1.5 µg/m^3	—	—
	Calendar Quarter	—	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m^3	
Visibility-Reducing Particles	8 Hour	See Footnote 1	No National 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)		

Notes:

1 - In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

µg/m3 =micrograms per cubic meter

CARB = California Air Resources Board

mg/m3 = milligrams per cubic meter

ppm = parts per million

Source: CARB 2017c

As summarized in Table 3.3-2, Solano County is currently designated as nonattainment for State ozone and PM_{10} standards, as well as national ozone and $PM_{2.5}$ standards. The County is currently designated unclassified for state $PM_{2.5}$ and federal PM_{10}. The standards for CO, NO_2, SO_2, and lead are being met in the County. Due to prevailing winds, ozone emissions in Solano County tend to be generated in the Bay Area and transported east to the County. As such, the YSAQMD is included in the Sacramento Federal Nonattainment Area by the EPA. Air districts throughout the Sacramento region are involved in cooperative planning efforts to meet federal and state health standards. The YSAQMD, as part of the Sacramento region, is incorporated into the following 8-hour ozone attainment plans developed by the Sacramento Metro Air Quality Management District (SMAQMD):

- 2013 Revision – Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013).
- Milestone Report (2012).
- Revision – Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2011).
- 2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2009).
- 2011 Reasonable Further Progress Plan (2008).

- Voluntary Reclassification to Severe (2008).
- 2008 Rate of Progress Plan (2006).
- Proposed $PM_{2.5}$ Implementation/Maintenance Plan and Re-Designation Request for Sacramento $PM_{2.5}$ Nonattainment Area (2013).

Table 3.3-2: Solano County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	—
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	—
Visibility Reducing Particles	Unclassified	—

Notes:
$PM_{2.5}$ = particulate matter less than 2.5 microns
PM_{10} = particulate matter between 2.5 and 10 microns
Source: CARB 2017d

Thresholds of Significance

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficultly of attaining federal and State Ambient Air Quality Standards. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. To help public agencies evaluate air quality impacts, the YSAQMD has developed the Handbook for Assessing and Mitigating Air Quality Impacts, which was adopted July 11, 2007. The YSAQMD's handbook includes the recommended thresholds of significance for project-level emissions, as summarized in Table 3.3-3.

Table 3.3-3: YSAQMD Significance Thresholds

Pollutants	YSAQMD Significance Thresholds
ROG	10 tons per year
NOx	10 tons per year
PM_{10}	80 pounds per day
CO	Violation of a State ambient air quality standard for CO

Notes: CO = carbon monoxide
NOx = nitrogen oxides
PM_{10} = particulate matter between 2.5 and 10 microns
ROG = reactive organic gases
Source: YSAQMD 2007

The EPA has included the YSAQMD as a $PM_{2.5}$ nonattainment area within the Sacramento Federal Nonattainment area for $PM_{2.5}$; however, the YSAQMD has not established a threshold of significance for $PM_{2.5}$. The YSAQMD has

been working in conjunction with the SMAQMD to reduce $PM_{2.5}$ within the region and revise the nonattainment status designation.

The YSAQMD has also established thresholds for development projects that have the potential to expose the public to TACs from stationary sources. If a project were to exceed the following thresholds, it would be considered to have a significant air quality impact. These thresholds are based on the YSAQMD's Risk Management Policy.

- Probability of contracting cancer for the maximally exposed individual (MEI) equals to 10 in one million or more.
- Ground-level concentrations of noncarcinogenic toxic air contaminants would result in a Hazard Index equal to one for the MEI or greater.

While the YSAQMD's Risk Management Policy provides a basis for a threshold for TACs from stationary sources, this policy does not cover TACs from mobile sources. The YSAQMD has no permitting or other regulatory authority over mobile sources. While the YSAQMD continues to evaluate a threshold of significance for mobile source TAC, no specific mobile source TAC threshold is proposed at this time.

Additionally, the YSAQMD has established rules and regulations to attain and maintain state and federal air quality standards. The rules and regulations that apply to this proposed project include, but are not limited to, the following:

Rule 2.3 – Ringelmann Chart

301 Requirements

301.1 A person shall not discharge into the atmosphere from any single source of emission listed under section 111 of this rule, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than 3 minutes in any 1 hour which is:

a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.1 a. of this rule.

301.2 Effective 6 months after the adoption of the revisions of this rule, a person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than 3 minutes in any 1 hour which is:

a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.2 a. of this rule.

Rule 2-5: Nuisance

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to a business or property.

Rule 2.11: Particulate Matter

301 Requirement: A person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended PM emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

Rule 2.14: Architectural Coatings

The purpose of this rule is to limit the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the YSAQMD.

Rule 2.28: Cutback and Emulsified Asphalt

The purpose of this rule is to limit the emissions of organic compounds from the use of cutback and emulsified asphalts in paving materials, paving, and maintenance operations.

3.3.2 Methodology

Construction and operational emissions for the proposed project were modeled using the California Emissions Estimator Model (CalEEMod). The model inputs were based on information from the project design as described in Section 2.0, Project Description and CalEEMod default values. The model output and detailed assumptions are provided in Appendix B. In addition, to address potential risk and hazard impacts a health risk assessment was conducted for the proposed project. The results of the health risk assessment are provided in Appendix C.

Methodology and thresholds for criteria air pollutant impacts and community health risk, as set forth in the YSAQMD's Handbook. The YSAQMD's screening thresholds (see Table 3.3-3) and significance criteria are applicable to the proposed project. If a project exceeds the screening thresholds, it would be required to conduct a full analysis using the significance criteria set forth in the YSAQMD Handbook.

3.3.3 Environmental Impact Analysis

This section discusses potential impacts related to air quality associated with the proposed project and provides mitigation measures where necessary.

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

The YSAQMD thresholds of significance for criteria pollutants are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on the YSAQMD's ability to reach attainment. Emissions that are above these thresholds have not been accommodated in the air quality plans and would not be consistent with the air quality plans. Because the YSAQMD was designated nonattainment for ozone and $PM_{2.5}$, air quality plans have been developed for these pollutants. In addition, maintenance plans for PM_{10} and CO have been developed and approved by the EPA. Air quality modeling was performed using project-specific details to determine whether the proposed project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance. The proposed project's construction-related emissions are shown in Table 3.3-4 below. The results of the unmitigated emissions modeling were compared to the YSAQMD standards of significance to determine the associated level of impact.

Construction Emissions

The proposed project would generate emissions from construction equipment exhaust, worker travel, materials and equipment deliveries, and fugitive dust. Construction would last approximately 12 months and would occur between August 2020 and August 2021.

During construction (grading), fugitive dust (PM_{10}) would be generated from earth-moving activities. The majority of fugitive dust would remain localized and would be deposited near the project site. The proposed project would involve ground disturbance but would not generate PM_{10} emissions that exceed the YSAQMD's threshold of significance; however, YSAQMD recommends that all projects implement Best Management Practices (BMPs) to reduce dust emissions and avoid localized health impacts. Mitigation Measure AIR-1 requires the application of BMPs for fugitive dust control. Implementation of Mitigation Measure AIR-1 would ensure that impacts from fugitive dust generated during construction activities would be less than significant.

As shown in Table 3.3-4, the proposed project's emissions would be less than the YSAQMD's thresholds of significance; therefore, impacts would be less than significant, and the proposed project would not obstruct the implementation of an applicable air quality plan.

Table 3.3-4: Construction and Operational Emissions Estimates

	ROG (tons per year)	**NOx (tons per year)**	**PM_{10} (pounds per day)**
Construction Emissions (2020)[1,2]	**0.31**	**1.19**	**1.08**
Construction Emissions (2021)[1,2]	**0.30**	**1.19**	**1.08**
Operational Emissions	**0.42**	**0.94**	**2.85**
YSAQMD significance thresholds	10 tons per year	10 tons per year	80 pounds per day
Potential for project to exceed threshold	None	None	None

Notes:

NOx = nitrogen oxides

PM_{10} = particulate matter between 2.5 and 10 microns

ROG = reactive organic gases

YSAQMD = Yolo-Solano County Air Quality Management District

1. Includes mitigation for dust control.

2. The original construction schedule of January 2020 through December 2020 has been shifted to occur between August 2020 and August 2021. The duration of construction (approximately 12 months) remains the same; however, the annual tons per year would be split between 2020 and 2021. As such the original annual estimated amount has been evenly divided between both years.

Operational Emissions

Operational emissions would occur over the lifetime of the proposed project and would be from two main sources: area sources and motor vehicles, or mobile sources. It is assumed that the hotel would be operational and occupied in 2021. If a later build-out year were used, the emissions would be lower due to cleaner vehicles from increasing regulations. Therefore, using an earlier year to consider full buildout of the proposed project would provide a worst-case scenario of emissions.

The pollutants of concern are ROG, NOx, and PM_{10}. The project operational emissions for the respective pollutants were calculated using CalEEMod. The YSAQMD Criteria Air Pollutant Significance thresholds were used. The results for annual and summer emissions were the highest and are presented in Table 3.3-4. The daily operational emissions would be less than significant.

The modeling performed for the proposed project included compliance with YSAQMD rules and regulations. As shown in Table 3.3-4, the project's operational emissions would not exceed the YSAQMD-recommended thresholds of significance, and impacts would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM AIR-1: **Application of BMPs for Fugitive Dust Control.** The following conditions will be included in the General Notes and/or Grading Plan for the proposed project, under the descriptive heading "Dust and Equipment Exhaust Control" and would be implemented during construction activities:

- Visible emissions from stationary diesel-powered equipment are not allowed to exceed 40 percent opacity for more than 3 minutes in any one-hour, as regulated under District Rule 2.3, Ringelmann Chart.
- All material excavated, stockpiled, or graded will be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
- All areas with vehicle traffic will be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
- All onsite and construction traffic will be limited to a speed of 15 miles per hour within the project site and surrounding neighborhood.
- All land clearing, grading, earth moving, or excavation activities in the project area will be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 miles per hour.
- All inactive portions of the construction site will be covered, revegetated, or watered until a suitable cover is established. Alternatively, the Project Contractor may apply County-approved nontoxic soil stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.
- All material transported offsite will be securely covered to prevent public nuisance, or there must be a minimum of 2 feet of freeboard in the bed of the transport vehicle.
- Paved roads adjacent to the proposed project will be swept at the end of each day or more frequently, if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud that may have resulted from activities at the project site.

- A publicly visible sign will be posted with the telephone number and person to contact at the City regarding dust complaints. This person will respond and take corrective action within 48 hours of a complaint or issue notification. The YSAQMD's phone number will also be visible to ensure compliance with applicable regulations.
- All unnecessary vehicle idling will be restricted adjacent to the project site for a period of 5 minutes.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact AIR-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?

Impact Analysis
A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants, including ozone and PM, is a result of past and present development, and thus, cumulative impacts related to these pollutants could be considered cumulatively significant. Future attainment of standards is a function of successful implementation of YSAQMD attainment plans. Consequently, the YSAQMD's approach to cumulative thresholds of significance is relevant to whether a project's individual emissions would result in a cumulatively considerable contribution to the regional existing cumulative impacts related to air quality conditions.

According to the YSAQMD Handbook for Assessing and Mitigating Air Quality Impacts, the YSAQMD has developed control measures for stationary, area, and transportation sources of air pollution. Emissions above individual thresholds as defined in the Handbook would have a significant cumulative impact on regional air quality unless offset. As discussed above, emissions from the proposed project would not exceed the YSAQMD-recommended thresholds. In addition, the proposed project would be required to comply with all applicable YSAQMD rules and regulations. Therefore, the proposed project's individual emissions would not be expected to result in a cumulatively considerable contribution to a significant cumulative impact, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis
This discussion addresses whether the proposed project would expose sensitive receptors to substantial pollutant concentrations. The localized pollutants that could impact sensitive receptors include: NOA, construction-generated fugitive dust (PM_{10}), construction generated DPM, CO hotspots and operational-related TACs. Project construction and operational impacts are assessed separately below.

A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses where sensitive receptors are typically located:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences
- Schools, playgrounds, and childcare centers

The project site is located in the Solano County portion of the SVAB, within the jurisdiction of the YSAQMD. The YSAQMD has not adopted standards of significance to assess construction health risk impacts. In accordance with CEQA Guidelines Section 15064.7 (Thresholds of Significance), the City exercises its own discretion to use the significance thresholds in the BAAQMD's CEQA thresholds based on substantial evidence contained in BAAQMD's record for adoption of the thresholds (which is relied on and incorporated herein).

The BAAQMD has established a maximum threshold for land use projects that have the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of TACs. The BAAQMD thresholds of significance for TACs for single sources are: 1) probability of contracting cancer for the MEI exceeds 10 in one million; or 2) ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than one for the MEI.

Project as a Source - Construction

Construction-Generated DPM

Construction activity using diesel-powered equipment emits DPM, a known carcinogen. Diesel particulate matter includes exhaust $PM_{2.5}$. A 10-year research program (CARB 2015) demonstrated that DPM (exhaust $PM_{2.5}$) from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. Health risks from TACs are a function of both concentration and duration of exposure. Construction diesel emissions are temporary, affecting an area for a period of weeks or months. Additionally, construction-related sources are mobile and transient in nature.

The health risk assessment evaluated DPM (represent as exhaust $PM_{2.5}$) and $PM_{2.5}$ (exhaust $PM_{2.5}$ and fugitive $PM_{2.5}$) emissions generated during construction of the proposed project and the related health risk impacts for sensitive receptors located within 1,000 feet of the project boundary. According to the BAAQMD, a project would result in a significant impact if it would individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, an increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). As shown in Table 3.3.5 below, the health risk from these sources is determined to be less than significant.

The project site is located within 1,000 feet of existing sensitive receptors that could be exposed to diesel emission exhaust during the construction period. The nearest sensitive receptors are patients occupying the buildings that comprise the Kaiser Permanente Medical Center, the closest of which is located approximately 285 feet to the east of the project site. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source



location to concentrations at the receptor locations of interest (i.e., receptors at a nearby hospital). The MEI was found to be located at the existing Kaiser Permanente Medical Center, at a building located approximately 470 feet northeast of the project site.

Table 3.3-5: Unmitigated Health Risks from Project Construction to Off-Site Receptors

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index[2]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks and Hazards at the MEI[1]			
Risks and Hazards at the MEI: Infants	3.064	0.006	0.031
Risks and Hazards at the MEI: Child	0.496	0.006	0.031
Risks and Hazards at the MEI: Adult	0.077	0.006	0.031
BAAQMD Significance Threshold	10	1.0	0.3
Exceeds Individual Source Threshold?	No	No	No

Notes:

$\mu g/m^3$ = micrograms per cubic meter

DPM = diesel particulate matter

MEI = maximally exposed individual

$PM_{2.5}$ = particulate matter less than 2.5 microns

REL = recommended exposure limit

1. The MEI is located at the existing Kaiser Permanente Medical Center, at a building located approximately 470 feet northeast of the project site.

2. Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as $PM_{2.5}$ exhaust) by the REL of 5 $\mu g/m^3$.

Source: Stantec 2019a; Appendix C.

Construction Fugitive Dust

During construction (grading), fugitive dust (PM_{10}) is generated. As detailed in Impact AIR-1, the project would result in a less than significant dust impact after incorporation of Mitigation Measure AIR-1. Therefore, the proposed project would not expose adjacent receptors to significant amounts of construction dust after incorporation of mitigation.

Naturally Occurring Asbestos

The California DOC and the United States Geological Survey (USGS) have published a guide for generally identifying areas that are likely to contain NOA. There are no NOA areas located in Solano County. Therefore, there is no impact.

Project as a Source – Operation

CO Hotspot

As discussed in Impact AIR-2, the project is not expected to generate a CO hotspot. Therefore, the proposed project would not expose receptors to substantial CO concentrations from operational activities.

Toxic Air Contaminants

As defined in the California Air Pollution Control Officer's Guidance Document – Health Risk Assessments for Proposed Land Use Projects (CAPCOA 2009), two types of land use projects have the potential to cause long-term public health risk impacts:

- Type A Projects: new and proposed land use projects that generate TACs (such as gasoline stations, distribution facilities, or asphalt batch plants) that impact sensitive receptors. The project is not a land use that would be considered a source of TACs.
- Type B Projects: new land use projects that will place sensitive receptors (e.g., residential units) in close proximity to existing toxic sources (e.g., freeway). The project is not considered a sensitive receptor.

Because the project is not a source of long-term operational TACs and is not a sensitive receptor, long-term operational health risks would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact AIR-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact Analysis
The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Project operations would not be anticipated to produce odorous emissions. Construction activities associated with the proposed project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present onsite temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

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3.4 BIOLOGICAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

3.4.1 Environmental Setting

The proposed project would be located on APN 0133-120-380 within the Vaca Valley Business Park Policy Plan area. This parcel is approximately 3.41 acres and is currently undeveloped. The proposed Project site's topography is generally flat with a maximum elevation of 90 feet above mean sea level. The site's existing drainage flows in a south/south easterly direction toward Horse Creek, which is located about 135 feet south of the Project site. The proposed Project site is surrounded by the following land uses:

- **North.** Undeveloped land is located north of the proposed Project site, beyond which lies New Horizons Way followed by undeveloped land within the Vaca Valley Business Park that is designated Business Park by the City's General Plan.
- **South.** Undeveloped land, identified as APN 0133-120-540, and Horse Creek are located south of the proposed Project site. Beyond Horse Creek lies Horse Creek Drive followed by undeveloped land, which is within the Vaca Valley Business Park and designated Business Park by the City's General Plan. I-80 is approximately 0.25 mile south of the proposed Project site.

- **West.** Genentech's Vacaville Campus, which also includes an 8.9-megawatt solar facility, is located west of the proposed Project site, across Grassland Drive. I-505 is located approximately 0.5 mile west of the proposed Project site.
- **East.** Kaiser Permanente Medical Center is located east of the proposed Project site, across East Akerly Drive.

The topography of the Project site is nearly level with elevations range from approximately 75 to 90 feet above mean sea level. Regionally, the Project site has a Mediterranean climate characterized by hot, dry summers and moderate winters, with average annual temperatures ranging from 57.5 to 94 degrees Fahrenheit (°F). Historical data used to describe the climate was collected at the Vacaville Nut Tree Airport Station, approximately 1.25 miles southwest of the Project site (Western Regional Climate Center 2019). Precipitation in the Project site occurs as rain. Average annual rainfall is 22 inches and occurs primarily from October through April. The growing season (i.e., 50 percent probability of air temperature 32ºF or higher) on the Project site is around 293 days and occurs between mid-February and early December (Western Regional Climate Center 2019).

3.4.2 Methodology

This section summarizes the methods used to identify and analyze potential impacts on sensitive habitats and effects on special-status plants and animals that may occur on the project site. As described below, biologists began their research with database searches and literature reviews to determine which rare natural communities and special-status species have the potential to occur on the project site. A more detailed description of these methods is provided in the project's Biological Resources Technical Report, which is included in this ISMND as Appendix D (Stantec 2019b).

Background Research

This analysis is based on a review of existing information about sensitive biological resources known to occur near the project site and followed by field surveys to determine whether biological resources are absent, present, and/or are likely to be present. For the purpose of this evaluation, special-status plant species include plants that are: 1) listed as threatened or endangered under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA); 2) proposed for federal listing as threatened or endangered; 3) State or federal candidate species; 4) designated as rare by the California Department of Fish and Wildlife (CDFW); or 5) California Rare Plant Rank (CRPR) 1A, 1B, 2A or 2B species. Special-status animal species include species that are 1) listed as threatened or endangered under the CESA or FESA; 2) proposed for federal listing as threatened or endangered; 3) state or federal candidate species; or 4) identified by the CDFW as species of special concern or fully protected species.

Sensitive natural communities are those communities that are highly limited in distribution and may or may not contain rare, threatened, or endangered species. The California Natural Diversity Database (CNDDB) ranks natural communities according to their rarity and endangerment in California. Habitats are considered sensitive if they are identified on the CDFW List of Vegetation Alliances and Associations as being highly imperiled or classified by CDFW in the CNDDB as natural communities of special concern – Ranks S1 to S3.

The potential for special-status species to occur within the study area, which is defined as a 100-foot buffer around the project site, were classified under one of five categories, as described below. Only those special-status species with an occurrence potential of moderate or greater are evaluated in detail.

- **Present:** The species is known to be present or has been recently observed in the study area.

- **High:** The species has been observed and documented within 5 miles of the study area within the last 5 years, and suitable habitat for the species is present.
- **Moderate:** The proposed project is located within the range of the species, there are documented occurrences within 5 miles of the study area, and/or potential habitat for the species exists in the study area.
- **Low:** The proposed project is located within the range of the species, and low-quality (e.g., disturbed, agricultural) habitat is present.
- **Absent:** The proposed study area is located outside of the species range, and/or potential habitat to support the species is not present in the study area.
- **Not Present:** Potential habitat for the species is present in the study area; however, the species has been determined to be absent from the study area given the results of focused/protocol-level survey(s).

A CNDDB and CNPS database search for special-status species typically includes nine U.S. Geological Survey 7.5-minute quadrangle maps for a small project located within a single quadrangle—the quadrangle that covers the study area—and the eight quadrangles that surround the project quadrangle. In this case, the *Allendale, Mount Vaca, Dixon, Dozier, Elmira and Fairfield North* topographic quadrangles within a 5-mile radius of the study area were queried.

Other information sources consulted to determine which special-status species could potentially occur in the project site included the following:

- USGS California 7.5-minute topographic quadrangles for Allendale, Mount Vaca, Dixon, Dozier, Elmira and Fairfield North;
- Aerial photographs of the project site and surrounding vicinity (Google Earth 2019);
- United States Fish and Wildlife Service (USFWS) list of endangered and threatened species that may occur in the project site (USFWS 2019a);
- USFWS Designated Critical Habitat (USFWS 2019a)
- USFWS National Wetlands Inventory (USFWS 2019b)
- The CDFW CNDDB plant and animal records within 5 miles of the project site (CDFW 2019a);
- *Special Animals List* (CDFW 2019b);
- *State- and Federally Listed Endangered and Threatened Animals of California* (CDFW 2019c)
- *State- and Federally Listed Endangered, Threatened and Rare Plants of California* (CDFW 2019d);
- *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2019e).
- The California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Plants* (CNPS 2019) records for Solano County, California;
- California Wildlife Habitat Relationships System (WHRS) (CDFW 2014); and
- Other pertinent databases and literature, including *The Jepson Manual: Vascular Plants of California*, *Second Edition* (Baldwin et. al. 2012).

Based on this background research, a list of special-status species that have the potential to occur or are known to occur in the project site and vicinity was developed. The list was refined based on reconnaissance-level biological field surveys to determine the potential for those species to occur in the project site.

Reconnaissance Survey

A reconnaissance-level biological survey was conducted by Stantec on August 23, 2019. The reconnaissance-level survey was performed on foot, walking meandering transects throughout the entire study area to characterize habitats, identify aquatic resources that may be subject to regulatory agency jurisdiction (e.g., United States Army Corps of Engineers [USACE], CDFW), assess potential for special-status species to occur, and to record observed species. To better focus the field survey efforts on those plant and animal special-status species that may occur in the study area, a target list of potentially occurring species was developed during the literature and database review process. Plant taxonomy for the botanical survey uses the Jepson Manual (Baldwin et al. 2012).

Vegetation Communities

Habitat types in the study area were classified based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988), as well as the *California Natural Community List* (CDFW 2019f), which is adapted from the technical approach and vegetation alliance classification system described in *A Manual of California Vegetation* (Sawyer et al. 2009). The habitat community present in the study area includes barren and ruderal. No aquatic resources were observed in the study area. Descriptions of the habitat is provided below.

Upland Habitat Types

Barren and Ruderal

The project site is highly disturbed from frequent discing and tilling, which has created barren and ruderal habitats providing little to no vegetation communities. Based on historical areal imagery, the project site does not support grassland communities or other habitats when not recently disturbed. Due to frequent human disturbance, the vegetation consists of a sparse cover of opportunistic non-native ruderal grass and forb species, such as Italian rye grass (*Festuca perennis*), spikeweed (*Centromadia fitchii*), mustard species (*Brassica* spp.), Russian thistle (*Salsola tragus*), European heliotrope (*Heliotropium europaeum*) and stinkwort (*Dittrichia graveolens*). The project site is bound by roadways on three sides and an adjacent barren and ruderal undeveloped property to the west that is also frequently disturbed by discing and tilling.

Aquatic Habitats

No perennial streams were observed within the project site that would be covered under the jurisdiction of CDFW, USACE or Regional Water Quality Controll Board (RWQCB); however, Horse Creek (perennial stream) is located about 135 feet south of the project site. This stream has been altered to function as a flood control channel, receives water primarily through runoff from surrounding developments and roadsides, and is also fed by other tributaries located beyond the project site. Common vegetation observed within Horse Creek consists primarily of cattail species (*Typha* sp.). Tall cyperus (*Cyperus eragrostis*), perennial pepperweed (*Lepidium latifolium*), and California sycamore (*Platanus racemosa*) were observed along the bed and banks of Horse Creek.

Special-Status Species

Plants

Regionally occurring special-status plant species were identified based on a review of pertinent literature, the USFWS species list, CNDDB and CNPS database records, and the reconnaissance-level biological field survey results. CNNDB special-status plant species occurrences were reviewed within 5 miles of the project site. For each species, habitat requirements were assessed and compared to the habitats in the project site and immediate vicinity to

determine if potential habitat occurs in the project site. As described in the Biological Resources Technical Report (Appendix D), the project site does not provide suitable habitat for special-status plants.

Wildlife

Regionally occurring special-status animal species were identified based on a review of pertinent literature, the USFWS species list, CNDDB database records, a query of the California WHRS (CDFW 2014), and the reconnaissance-level biological field survey results. CNNDB special-status animal species occurrences were reviewed within 5 miles of the project site. For each species, habitat requirements were assessed and compared to the habitats in the project site and the immediate vicinity to determine the species' potential to occur in or near the project site. As described in the Biological Resources Technical Report (Appendix D), the project site does not provide suitable habitat for special-status animal species.

Critical Habitat

No designated critical habitat is present at the project site or within the immediate vicinity.

3.4.3 Environmental Impact Analysis

This section discusses potential impacts on biological resources associated with the proposed project and provides mitigation measures where necessary.

Impact BIO-1 Have a substantial adverse effect, either directly or through habitat modifications on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact Analysis

Special-Status Plant Species

There is no potential habitat in the project site for special-status plant species with occurrences within a 5-mile radius. Although the reconnaissance-level biological survey conducted on August 23, 2019 (i.e., late bloom period for the region), is outside the blooming period for most of the plants known to occur within five miles of the project site, the site is frequently and heavily disturbed from discing or tilling. Historical aerial imagery indicates that this has been occurring over the course of several years, thereby limiting the opportunity for vegetation to establish. Based on the lack of suitable habitat, the project site does not provide moderate- or high-potential habitat for special-status plant species to occur, and there would be no impacts to special-status plants.

Special-Status Wildlife Species

Although there are CNDDB occurrence records within 5 miles of the project site for special-status animal species (CDFW 2019a), the project site does not provide suitable habitat (i.e., tall trees, burrows, aquatic features, elderberry shrubs) for potential special-status species to occur. Due to frequent disturbance and lack of vegetation, the project site provides minimal foraging habitat for migratory birds or special-status raptors protected under the Migratory Bird Treaty Act (MBTA) or California Fish and Game Code. The immediate surrounding area also provides minimal habitat for special-status species and migratory birds as undeveloped areas are heavily and routinely disturbed through discing or tilling. The adjacent Horse Creek and associated aquatic vegetation may provide suitable habitat for aquatic and semi-aquatic special-status species and migratory nesting birds; however, this is outside the project site boundaries, and there would be no associated impacts.



Avoidance and minimization measures would be incorporated into the proposed project to avoid direct and indirect effects to special-status species and their habitat. If project activities occur during the nesting bird season (generally considered February 1 to August 31), construction may cause indirect effects to nesting birds (e.g., noise and vibration) by causing adults to abandon active nests, resulting in nest failure and reduced reproductive success. Mitigation Measure BIO-1 requires preconstruction nesting bird surveys to document all nests on the project site and implementation of protective buffers around documented nests during construction to minimize disturbance to nesting birds during construction. Based on the lack of suitable nesting habitat in the project site, there is low potential for special-status species to occur, and with the implementation of Mitigation Measure BIO-1 impacts to special-status raptors and migratory nesting bird species would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM BIO-1: **Avoid Disturbance of Nesting Birds.** If project activities occur during the nesting season for native birds (February 1 to August 31), the following measures shall be implemented to avoid or minimize the potential for adverse impacts on nesting migratory birds and raptors:

- Pre-construction nesting bird survey for species protected by the MBTA and California Fish and Game Code shall be conducted by a qualified biologist within a 100-foot radius of proposed construction activities for passerines and a 300-foot radius for raptors no more than 2 weeks prior to the start of construction activities.
- If active nests are found, a qualified biologist shall determine the size of the buffers based on the nesting species and its sensitivity to disturbance. The size of the buffers may be reduced at the discretion of a qualified biologist, but no construction activities shall be permitted within the buffer if they are demonstrated to be likely to disturb nesting birds. Active nest sites shall be monitored periodically to determine time of fledging.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact Analysis

The project site does not contain any sensitive natural communities as classified by the CDFW. In addition, no aquatic habitats were identified within the project site that could be considered waters of the United States and subject to the USACE and RWQCB jurisdiction under Sections 404 and 401 of the Clean Water Act, or subject to CDFW jurisdiction under Section 1600 of the California Fish and Game Code. Therefore, the proposed project would have no impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or by the CDFW or USFW.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact BIO-3 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?

Impact Analysis
No aquatic resources or potential wetlands covered under the jurisdiction of the USACE or RWQCB occur within the project site. As such, there would be no impact to state or federally protected wetlands.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact BIO-4 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?

Impact Analysis
Habitat corridors are segments of land that provide linkages between different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. Habitat corridors often consist of riparian areas along streams, rivers, or other natural features. Habitat corridors have been recognized by federal agencies such as the USFWS and the State as important habitats worthy of conservation. In general, movement corridors consist of areas of undisturbed land cover that connect larger, contiguous habitats. The project site does not act as a corridor for species dispersal or provide migration habitat connectivity to adjacent habitat and is not part of any defined essential connectivity areas as identified in the California Essential Habitat Connectivity Project (Spencer et al. 2010).; therefore, the project would have no impact.

Level of Significance Before Mitigation
No Impact

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact Analysis

The project site does not contain any trees or involve the removal of any trees; therefore, no tree preservation policies apply. As such, there would be no impact with respect to conflicting with local tree policies or ordinances protecting biological resources such as a tree preservation policy or ordinance.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact BIO-6 Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?

Impact Analysis

The City falls within the jurisdiction of the Solano Multispecies Habitat Conservation Plan (HCP), which was released in administrative draft form in 2012. It is not within the jurisdiction of any adopted HCPs. The Solano draft HCP encompasses the cities of Vacaville, Fairfield, Suisun City, Vallejo, Dixon, and Rio Vista. The Solano County Water Agency (SCWA) assumes overall responsibility for coordination, reporting, and oversight of the conservation program. The project site is within the draft HCP boundaries and designated an Urban Development area. The HCP also includes the project site in the General Plan Designated Planned Development area (SCWA 2012).

The draft HCP designated the project site as being part of Zone 1 – Urban Zone. Within this zone, all development projects (defined as all ground-disturbing or habitat-disturbing projects and activities needed to accommodate urban growth) affecting draft HCP-covered species that are conducted in compliance with the goals and objectives of the draft HCP use the mitigation measures from the draft HCP, and are implemented under the authority and control of the draft HCP Plan Participants (e.g., City of Vacaville) would be authorized (SCWA 2012).The project would not conflict with any adopted HCPs or other approved local, regional, or state habitat conservation plan. Therefore, there would be no impacts.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.5 CULTURAL RESOURCES

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☐	☐	☒
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

The project site is located northeast of the City of Vacaville in Solano County, California in the Central Valley ecoregion. The climate is characterized by mild, wet winters and long, dry summers. Typical vegetation consists of grassland and valley oak, though much of the region has been intensively farmed since the 19th century (Griffith et al. 2016).

3.5.2 Methodology

To determine the presence or absence of cultural resources within the project site and vicinity, Stantec prepared a Cultural Resources Inventory Report on September 6, 2019. The cultural resources inventory report included a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS), literature review, Native American outreach, buried site sensitivity analysis, and a pedestrian field survey of all locations of anticipated ground disturbance for construction, staging, and access. The cultural resources inventory was conducted to satisfy the requirements of CEQA and follows CEQA Appendix G Guidelines. The Stantec Consulting Services Inc. 2019 Cultural Resources Inventory Report is provided in Appendix E.

Records Search and Literature Review

A records search (NWIC File No. 19-0351) was completed at the NWIC of the CHRIS, located in Rohnert Park, California, on August 23, 2019. As an affiliate of the State of California Office of Historic Preservation, the NWIC is the official state repository of cultural resource records and reports for the region that includes Solano County. The search included the entire project site, as well as a one-quarter mile buffer around the project site (referred to as the project area). The following inventories were reviewed:

- Directory of Properties in the Historic Property Data File (California Office of Historic Preservation)
- National Register of Historic Places
- California Inventory of Historic Resources (California Department of Parks and Recreation).
- California Historical Landmarks (California Office of Historic Preservation).
- California Points of Historical Interest.
- All available historic maps, including historic topographic maps and Bureau of Land Management General Land Office maps.

In addition, Stantec contacted the California Native American Heritage Commission (NAHC), on September 3, 2019, to request a search of the Sacred Lands File and a list of Native American contacts that might have knowledge of tribal cultural resources within the project area. The request included a description of the proposed project, as well as a location map. A search of the NAHC Sacred Lands File was completed on September 16, 2019, and there was no indication of the presence of Native American cultural resources in the project area (Stantec 2019c; Appendix E). The NAHC also provided a list of three Native American individuals/organizations for further consultation, Chairman Charlie Wright of the Kletsel Dehe Band of Wintun Indians, Chairman Gene Whitehouse of the United Auburn Indian Community of the Auburn Rancheria, and Chairman Anthony Roberts of the Yocha Dehe Wintun Nation. On September 24, 2019, certified letters were sent to each of the contacts provided. Mr. Wright and Mr. Whitehouse both stated that they are not aware of any resources within the project area and had no further comment. Matthew Lowell, Jr., Tribal Treasurer and Historic Preservation Officer for the Yocha Dehe Wintun Nation, responded on September 23, 2019 that the project is within Yocha Dehe tribal territory. Mr. Lowell further stated that tribal monitoring is not recommended but that Tribal Monitor Supervisor, Robert Geary, should be engaged to provide pre-construction cultural awareness training to project personnel.

Records Search Results

Five studies have been conducted within the project site, and four additional studies have been conducted within 0.25 mile of the project site. No previously recorded cultural resources were identified within the project site or within the 0.25-mile record search area.

Field Survey

Stantec conducted a pedestrian survey of the project area on August 23, 2019, to identify historic and prehistoric sites and artifacts. The project site consisted of an undeveloped field that has been modified by grading, discing, and construction of the adjacent roads, New Horizons Way and East Akerly Drive. No additional historic properties, or historic-period or prehistoric archaeological sites were observed during the field survey and there are no standing structures requiring evaluation on the property. No indicators of buried cultural deposits (e.g., color or texture changes, ash, carbon, or fragments of bone, shell, glass, brick, or ceramics) were identified. More information about the survey can be found in Appendix E.

Native American Outreach

Native American outreach efforts are currently ongoing. Native American consultation efforts are discussed in more detail in Section 3.18, Tribal Cultural Resources. On October 18, 2019 Planning staff sent a letter to Yocha Dehe Wintun Nation to begin the AB 52 consultation process. The Yocha Dehe Wintun Nation Cultural Resources Department responded on November 13, 2019 and concluded that, based on the information provided, the Yocha Dehe Wintun Nation is not aware of any known cultural resources near the project site, and no cultural monitor is needed. The Yocha Dehe Wintun Nation provided revisions to the mitigation measures for the proposed project, included their treatment protocol, and recommended cultural sensitivity training for any pre-project personnel. The Yocha Dehe Wintun Nation's revisions to the mitigation measures and recommendations are incorporated in the environmental impact analysis presented in Section 3.5.3 and in the cultural resources inventory report (Appendix E).

Buried Site Sensitivity

Soils within or immediately adjacent to the project area consist of Clear Lake clay and San Ysidro sandy loam. These soils are very deep and are poorly to moderately well drained, respectively. Clear Lake series soils are found in flood basins, floodplains, and in the swales of drainageways. San Ysidro sandy loam is found on fan remnants and stream

terraces. Both soil types are on slopes of 0 to 2 percent within the project area. The geological landform within the project area is Quaternary-age alluvium derived from Franciscan Complex parent materials (Koenig 1965). The nearest water source is located about 135 feet from the project area and appears to have been at least partially modified or channelized. No permanent freshwater sources are located within the project area. While this type of landform is sensitive for cultural resources, the level of disturbance and lack of perennial freshwater within the project area suggest a low to moderate sensitivity for buried cultural resources (Meyer and Rosenthal 2007).

3.5.3 Environmental Impact Analysis

This section discusses potential impacts on cultural resources associated with the proposed project and provides mitigation measures where necessary.

Impact CUL-1 Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?

Impact Analysis

An archival record search and literature review, Native American consultation, and pedestrian survey were performed as part of the cultural resources inventory for the proposed project. No historical resources were identified within the project area, and there are no standing structures requiring evaluation. Therefore, the proposed project would not have an impact on any known or potential historical resources.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact CUL-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Impact Analysis

An archival record search and literature review, Native American consultation, and pedestrian survey were performed as part of the cultural resources inventory for the project. No archaeological resources were identified within the project area. The proposed project is therefore not anticipated to have an impact on any known or potential archeological resources. However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered unique archaeological resources. The proposed project would be required to implement Mitigation Measure CUL-1 in the event previously undiscovered subsurface unique archaeological resources are found at the project site. The implementation of Mitigation Measure CUL-1 would be in accordance with the standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface unique archaeological resources. The proposed project would also be required to incorporate Mitigation Measure CUL-2 to ensure that construction personnel are aware of the procedures if potential unique archaeological resources are identified. Therefore, with the implementation of Mitigation Measures CUL-1 and CUL-2 potential impacts to undiscovered archaeological resources would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.



Mitigation Measures

MM CUL-1: **Cultural Materials Discovered During Construction.** If any cultural resource is encountered during ground disturbance or subsurface construction activities (e.g., trenching, grading), all construction activities within a 50-foot radius of the identified potential resource shall cease until a Secretary of the Interior-qualified archaeologist and the Yocha Dehe Wintun Nation evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation 523 series forms. All forms and associated reports will be submitted to the NWIC of the CHRIS. The archaeologist shall determine whether the resource requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the resource is determined to be eligible for listing on the California Register of Historical Resources as a unique archaeological resource as defined in PRC Section 15064.5, the archaeologist shall develop a plan for the treatment of the resource. The plan shall contain appropriate mitigation measures, including avoidance, preservation in place, data recovery excavation, or other appropriate measures outlined in PRC Section 21083.2.

MM CUL-2: **Worker Awareness Training.** Prior to the start of construction, all field personnel shall receive worker's environmental awareness training on cultural resources. The training, which may be conducted with other environmental or safety trainings, will provide a description of cultural resources that may be encountered during construction and outline the steps to follow in the event a discovery is made.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact CUL-3 Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact Analysis

There are no known human remains within the project area and no indications that the project site has been used for burial purposes in the past. Therefore, it is unlikely that human remains would be encountered during construction. However, ground disturbance and subsurface construction activities associated with the proposed project could potentially disturb previously undiscovered human burial sites. If previously undiscovered human burial sites are found on the project site, the proposed project would be required to implement Mitigation Measure CUL-3 in accordance with Section 7050.5 of the California Health and Safety Code and PRC 5097.98. Implementation of Mitigation Measure CUL-3 would require all work to stop within 50 feet of the remains and to contact the Solano County Coroner and the appropriate City contact to evaluate the discovery. If the human remains are of Native American origin, the County Coroner must notify the NAHC within 24 hours of this identification. The NAHC would identify a Native American MLD to inspect the site and provide recommendations for the proper treatment of the remains within 48 hours. As such, implementation of Mitigation Measure CUL-3 would reduce impacts to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-3: **Human Burials Encountered During Construction.** If ground-disturbing activities uncover previously unknown human remains, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:

There shall be no further excavation or disturbance of the area where the human remains were found or within 50 feet of the find until the Solano County Coroner and the appropriate City representative are contacted. Duly authorized representatives of the Coroner and the City shall be permitted onto the project site and shall take all actions consistent with Health and Safety Code Section 7050.5 and Government Code Sections 27460, et seq. Excavation or disturbance of the area where the human remains were found or within 50 feet of the find shall not be permitted to re-commence until the Coroner determines that the remains are not subject to the provisions of law concerning investigation of the circumstances, manner, and cause of any death. If the Coroner determines that the remains are Native American, the Coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the MLD's recommendations, the owner or the MLD may request mediation by NAHC.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

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3.6 ENERGY

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

3.6.1 Environmental Setting

Pacific Gas and Electric Company provides electricity and natural gas service to the City. Upon buildout of the project site, electricity to the project site would be provided by PG&E. All electricity infrastructure would be located underground and would tie-in to existing infrastructure.

In February 2018, PG&E announced that it had reached California's 2020 renewable energy goal 3 years ahead of schedule, and now delivers nearly 80 percent of its electricity from greenhouse gas (GHG)-free resources. Approximately 33 percent of PG&E's electricity came from renewable resources including solar, wind, geothermal, biomass and small hydroelectric sources in 2017. Additionally, approximately 78.8 percent of PG&E's total electric power mix is from GHG-free sources including nuclear, large hydro and renewable sources of energy.

3.6.2 Methodology

The energy requirements for the proposed project were determined using the construction and operational estimates generated from the Air Quality Analysis (refer to Appendix B). The calculation worksheets for diesel fuel consumption rates for off-road construction equipment and on-road vehicles are provided in Appendix F. Short-term construction energy consumption is discussed below.

Short-Term Construction

Off-Road Equipment

The proposed project is anticipated to be constructed during 2020, breaking ground in August 2020 and planned to be completed by August 2021. Table 3.6-1 provides estimates of the project's construction fuel consumption from off-road construction equipment.

Table 3.6-1: Construction Off-Road Fuel Consumption

Project Component	Phase	Fuel Consumption (gallons)
Proposed Hotel	Site Preparation	5,226
	Site Grading	8,762
	Building Construction	336,162
	Paving	12,576
	Architectural Coating	1,721
Total		**364,447**

Source: Stantec 2019a

As shown in Table 3.6-1, construction activities associated with the proposed project would be estimated to consume 364,447 gallons of diesel fuel. 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, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

On-Road Vehicles

On-road vehicles for construction workers, vendors, and haulers would require fuel for travel to and from the site during construction. Table 3.6-2 provides an estimate of the total on-road vehicle fuel usage during construction. 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, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Table 3.6-2: Construction On-Road Fuel Consumption

Project Component	Total Annual Fuel Consumption (gallons)
Proposed Hotel	10,736
Total	**10,736**

Source: Stantec 2019a

Long-Term Operations

Transportation Energy Demand

Table 3.6-3 provides an estimate of the daily and annual fuel consumed by vehicles traveling to and from the proposed project. These estimates were derived using the same assumptions used in the operational air quality analysis for the proposed project.

Table 3.6-3: Long-Term Operational Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Daily VMT	Annual VMT	Average Fuel Economy (miles/gallon)[1]	Total Daily Fuel Consumption (gallons)	Total Annual Fuel Consumption (gallons)
Passenger Cars	58%	1,563	570,637	34.2	46	16,685
Light Trucks	21%	566	206,481	26.2	22	7,881
Light-Heavy to Heavy-Heavy Diesel Trucks	19%	510	186,111	6.1	84	30,510
Other	1%	19	6,991	6.1	3	1,146
Motorcycles	1%	18	6,457	50	0	129
Total	100%	2,676	976,676	-	154	**56,352**

Notes:

[1]As of December 2014, NHTSA indicated that the fuel economy of passenger vehicles averaged 34.2 miles per gallon and light trucks averaged 26.2 miles per gallon.

Percent of Vehicle Trips and VMT provided by CalEEMod.

Average fuel economy is provided by United States Department of Transportation, Bureau of Transportation Statistics and reflects fuel economy of overall fleet, not just new vehicles.

"Other" consists of buses and motor homes.

VMT = vehicle miles traveled

Source: Stantec 2019a

As shown above, daily vehicular fuel consumption is estimated to be 154 gallons of both gasoline and diesel fuel. Annual consumption is estimated at 56,352 gallons.

In terms of land use planning decisions, the proposed project would constitute development within an established community and would not be opening up a new geographical area for development such that it would draw mostly new trips or substantially lengthen existing trips. The proposed project would be well positioned to accommodate existing population and reduce vehicle miles traveled (VMT). For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region.

Building Energy Demand

As shown in Tables 3.6-4 and 3.6-5, the proposed project is estimated to demand 450,581 kilowatt-hours (KWhr) of electricity and 2,510,210 100-British Thermal Units (KBTU) of natural gas, respectively, on an annual basis.

Table 3.6-4: Long-Term Electricity Usage

Land Use	Size (ksf)	Title 24 Electricity Energy Intensity (KWhr/size/ year)	Nontitle 24 Electricity Energy Intensity (KWhr/size/ year)	Lighting Energy Intensity (KWhr/size/ year)	Total Electricity Energy Demand (KWhr/size/ year)	Total Electricity Demand (KWhr/year)
Hotel	56.65	2.05	3.22	2.35	7.62	431,681
Parking Lot	54.00	0	0	0.35	0.35	18,900
Total						**450,581**

Notes:
ksf = 1,000 square feet
KWhr= kilowatt hour
Source: Stantec 2019a

Table 3.6-5: Long-Term Natural Usage

Land Use	Dwelling Units (ksf)	Title 24 Natural Gas Energy Intensity (KBTU/size/year)	Nontitle 24 Natural Gas Energy Intensity (KBTU/size/year)	Total Natural Gas Energy Demand (KBTU/size/year)	Total Natural Gas Demand (KBTU/year)
Hotel	107	39.56	4.75	23,460	2,510,210
Parking Lot	0	0	0	0	0
Total					**2,510,210**

Notes:
The proposed project could potentially include a variety of uses consistent with the development standards, however the land use selections above were based on estimating the "worst-case" scenario demand for electricity.
ksf = 1,000 square feet
KBTU= 100 British Thermal Units
Source: Stantec 2019a

3.6.3 Environmental Impact Analysis

This section discusses potential energy impacts associated with the proposed project and provides mitigation measures where necessary.

Impact EN-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact Analysis

This impact addresses the energy consumption from both the short-term construction and long-term operations are discussed separately below.

Construction Energy Demand

As summarized in tables 3.6-1 and 3.6-2, the proposed project would require 364,447 gallons of diesel fuel for construction off-road equipment and 10,736 gallons of gasoline and diesel for on-road vehicles during construction. 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, it is expected that

construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region, and as such, impacts would be less than significant.

Long-Term Energy Demand

Building Energy Demand

Buildings and infrastructure constructed pursuant to the proposed project would comply with the versions of CCR Titles 20 and 24, including California Green Building Standards (CALGreen), that are applicable at the time that building permits are issued. In addition, the City's General Plan and Climate Action Plan include policies and programs that seek to reduce energy consumption. The proposed project is estimated to demand 450,581 KWhr of electricity per year and 2,510,210 KBTU of natural gas per year. This would represent an increase in demand for electricity and natural gas.

It would be expected that building energy consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current state regulatory requirements for new building construction contained in the 2016 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the proposed project. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update.

Therefore, while the proposed project would result in increased electricity and natural gas demand, the electricity and natural gas would be consumed more efficiently and would be typical of hotel development. Compliance with future building code standards would result in increased energy efficiency.

Based on the above information, the proposed project would not result in the inefficient or wasteful consumption of electricity or natural gas, and impacts would be less than significant.

Transportation Energy Demands

The daily vehicular fuel consumption is estimated to be 154 gallons of both gasoline and diesel fuel. Annual consumption is estimated at 56,352 gallons. The proposed project would constitute development within an established community and would not be opening up a new geographical area for development such that it would draw mostly new trips or substantially lengthen existing trips. The proposed project would be well positioned to accommodate existing population and reduce VMT. For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region, and impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact EN-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact Analysis

The City adopted its General Plan Update and Energy and Conservation Action Strategy (ECAS) on August 11, 2015. The Energy and Conservation Action Strategy was created for the City in compliance with state requirements that address the reduction of major sources of GHG emissions. The ECAS is a detailed, long-range strategy to reduce GHG emissions and achieve greater conservation of resources with regards to transportation and land use, energy, water, solid waste, and open space. Implementation of the ECAS is intended to guide the City's actions through a series of communitywide and municipal GHG emissions reduction measures to decrease the City's contribution to GHG emissions. Community-wide GHG emission reduction measures are exclusively aimed to increase energy independence; reduce spending on gas, electricity, and water; and improve air quality from non-City operations. Municipal GHG emission reduction measures apply exclusively to City operations.

The proposed project would not conflict with the energy objectives of the General Plan nor the strategies in the ECAS. The proposed project would constitute development within an established community and would not be opening up a new geographical area for development such that it would draw mostly new trips, or substantially lengthen existing trips.

The proposed project would comply with the versions of CCR Titles 20 and 24, including CALGreen, that are applicable at the time that building permits are issued and with all applicable City measures.

For the above reasons, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.7 GEOLOGY AND SOILS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☒	☐	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
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?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

3.7.1 Environmental Setting

Regional Setting

The City is located at the edge of two geographic provinces: the Sacramento portion of the Central Valley province and the Coast Ranges. Geologic conditions in this area are the result of activity occurring during the Mesozoic and Cenozoic eras. The physiography of the region is varied. Landforms common to the Vacaville area are the low hills and uplands to the west, and the low alluvial plains and flooded basins to the east.

The 1972 Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to establish regulatory Earthquake Fault Zones around the surface ruptures of active faults to reduce the hazard of surface fault rupture to structures built for human occupancy. There are no Alquist-Priolo Earthquake Fault Zones in the City (City of Vacaville 2013). However, the City is located within a seismically active region, and earthquakes have the potential to cause ground shaking of significant magnitude. The Vaca-Kirby Hills Fault system is the only fault system that passes through the City. The Vaca Fault has not experienced displacement within the past 11,700 years, and there is no evidence for displacement along the Kirby Hills Fault during the last 700,000 years. A fault is considered active if it has ruptured within the last 11,000 years. The Green Valley Fault system, which lies 12 miles to the southwest of the City, has been active within the past 200 years. The U.S. Geological Survey estimates there to be a 3 percent probability for a magnitude 6.7 or greater earthquake to occur along this fault prior to 2036. The Rogers Creek Fault, part of the Hayward Fault System, lies roughly 24 miles to the southwest of the city; this fault has an estimated 16 percent probability of producing a magnitude 6.7 or greater earthquake prior to 2036 (City of Vacaville 2015a).

Project Site Setting

The project site's topography is flat with an elevation of 90 feet above mean sea level. Horse Creek is about 135 feet south of the project site. According to the Geotechnical Investigation Report prepared by Achievement Engineering Corp, the soil encountered at the project site is generally classified as low plasticity clay; although, at some locations high plasticity clay may be present. As part of the geotechnical investigation, three soil borings were taken at the project site. At approximately 5 feet below ground surface (bgs), the soil borings encountered generally moist, very stiff, light brown lean clay with sand, which was followed by moist, hard, light brown lean clay at approximately 36 feet bgs. Groundwater was encountered at the project site at approximately 13 to 16 feet bgs (AEC 2019a). According to Figure SAF-2 in the General Plan, the project site is in an area with low risk for liquefaction (City of Vacaville 2015a). The project site and surrounding area are generally flat and not located in a landslide hazard zone (City of Vacaville 2015a).

3.7.2 Methodology

A Geotechnical Investigation Report was prepared for the proposed project by Achievement Engineering Corp. on March 11, 2019. The results of the geotechnical exploration report were reviewed to determine potential geology and soils impacts from the proposed project and are summarized herein. The Geotechnical Investigation Report is provided in Appendix G.

Paleontological Resources

To determine the potential for paleontological resources at the project site, geologic units from maps of the area were analyzed for their potential paleontological sensitivity based on existing literature and known localities. The paleontological database at the University of California, Berkeley's Museum of Paleontology (UCMP) was consulted, and guidance from the Society of Vertebrate Paleontology (SVP) guidelines was followed while conducting the paleontological review.

Society of Vertebrate Paleontology's Guidance for Assessing the Paleontological Potential of Rock Units

The SVP has identified two phases for identification of potential paleontological resources: 1) assess the potential that nonrenewable paleontological resources could be directly or indirectly impacted or destroyed by the proposed project activities, and 2) generate and implement measures to mitigate any potential impacts from proposed project activities.

The SVP classifies the potential for paleontological resources within rock units as units having high, undetermined, low, or no potential for containing paleontological resources.

High potential is characterized as, "rock units from which vertebrate or significant invertebrate, plant or trace fossils have been recovered, including but not limited to sedimentary formations, some volcaniclastic formations, some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, sedimentary rock units temporally or lithologically suitable for the preservation of fossils, rock units which contain potentially datable organic remains older than late Holocene, and rock units which may contain new vertebrate deposits, traces, or trackways" (SVP 2010). The SVP classifies underdetermined potential as, "rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment" (SVP 2010). Low potential is described as, "poorly represented by fossil specimens in institutional collections, or where fossils are only preserved in rare circumstances" (SVP 2010). Rock units with no potential to contain paleontological resources include high-grade metamorphic rock (e.g., gneisses, schists) and plutonic igneous rocks (e.g., granites, diorite) (SVP 2010).

Known Resources

The UCMP database search did not identify any paleontological resources within the project location. The closest vertebrate fossil site, the Arco Arena Site, is an assemblage located approximately 24 miles northeast of the project area. The soils in the project location are comprised of Quaternary alluvium (Koenig 1965). These soils are recently formed and do not contain strata known to be geologically sensitive for the presence of paleontological resources (e.g., Plio-Pleistocene-age sedimentary rock). Based on soil type combined with the fact that no vertebrate fossils have been recovered from in or near the project location, the project area has a low potential for paleontological resources.

3.7.3 Environmental Impact Analysis

This section discusses potential impacts related to geology and soils associated with the proposed project and provides mitigation measures where necessary.

Impact GEO-1 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.**
- **ii) Strong seismic ground shaking?**
- **iii) Seismic-related ground failure, including liquefaction?**
- **iv) Landslides?**

Impact Analysis

i) Fault Rupture

There are no Alquist-Priolo Earthquake Fault Zones in the city. The geotechnical investigation did not identify any mapped active or inactive faults crossing or projecting toward the project site (AEC 2019a). Therefore, the potential for damage to structures at the project site due to rupture of a known earthquake fault is low, and impacts would be less than significant.

ii) Ground Shaking

The project site is in a seismically active region, and earthquake-related ground shaking is expected to occur during the design life of the proposed project. According to the geotechnical investigation report prepared for the proposed project, the nearest faults to the project site include the Vaca Fault, approximately 0.33 mile to the west; and the Midland Fault, approximately 7 miles to the northeast (AEC 2019a). Construction of the proposed project would be required to conform to the latest edition of the California Building Code, which includes engineering standards appropriate to withstand anticipated ground accelerations at the project site. Conformance with the earthquake design parameters of the California Building Code would be subject to City review as part of the building permit review process. In addition, the proposed project would be subject to General Plan Policies SAF-P1.4, SAF-P1.5, and SAF-P1.6, which require new developments to prepare geotechnical studies and incorporate the recommendations of these reports into the project design. The recommendations identified in the site-specific geotechnical investigation report would be incorporated into the proposed project as part of Mitigation Measure GEO-1. As such, compliance with the California Building Code and implementation of Mitigation Measure GEO-1 would reduce the risks from ground shaking to a less than significant level.

iii) Ground Failure, including Liquefaction

According to Figure SAF-2 in the General Plan, the potential for liquefaction to occur on the project site is low (City of Vacaville 2015a). Construction of the proposed project would be required to conform to the latest edition of the California Building Code, which contains seismic building criteria and standards that are designed to reduce liquefaction risks to acceptable levels. The proposed project would also implement Mitigation Measure GEO-1 and incorporate the recommendations identified by the geotechnical investigation report into the project design. Therefore, compliance with the California Building Code and implementation of Mitigation Measure GEO-1 would reduce impacts from ground failure and liquefaction to a less than significant level.

iv) Landslides

The project site is flat with an elevation of 90 feet above mean sea level. According to Figure SAF-3 in the General Plan, the project site is mapped in an area with low potential for landslides to occur (City of Vacaville 2015a). The project site would not be subject to seismically induced landslide hazards, and no impact would occur.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM GEO-1: **Implement Geotechnical Design Recommendations.** Prior to issuance of grading permits, the applicant shall incorporate all design specifications and recommendations contained within the geotechnical investigation report into relevant project plans and specifications. These specifications pertain to but are not limited to expansive soils, building foundations, foundation drainage, and backfill of excavations. The project site plans shall be submitted to the City and reviewed as part of the building permit review process.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-2 Result in substantial soil erosion or the loss of topsoil?

Impact Analysis

Construction activities associated with the proposed project include site clearing, grading, and construction of the hotel building on the 2.26-acre site. The estimated amount of cut and fill during project construction would be 3,000 and 1,000 cubic yards, respectively. These activities could expose unprotected soils to stormwater runoff, causing erosion and loss of topsoil. Projects that disturb 1 acre or more of soils during construction are required to comply with the National Pollutant Discharge Elimination System (NPDES) permitting program and implement a Stormwater Pollution Prevention Plan (SWPPP) that identifies BMPs to control the discharge of sediment and other pollutants during construction. As described in Section 3.10, Hydrology and Water Quality, the proposed project would implement a SWPPP and associated BMPs as part of Mitigation Measure HYD-1 to reduce erosion impacts. Therefore, soil erosion impacts associated with construction impacts would be less than significant with implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact Analysis

During the geotechnical investigation, three soil borings were taken at the project site, which encountered generally moist, very stiff, light brown lean clay with sand at approximately 5 feet bgs; followed by moist, hard, light brown lean clay at approximately 36 feet bgs. Groundwater was encountered at the project site at approximately 13 to 16 feet bgs (AEC 2019a). The project site and surrounding area are relatively flat and not located in an area subject to seismically induced landslide hazards. Additionally, Figure SAF-2 in the General Plan indicates that the project site is in an area with low risk for liquefaction (City of Vacaville 2015a). The proposed project would be required to comply with the latest edition of the California Building Code and implement the recommendations identified in the site-specific geotechnical investigation report. Specifically, the recommendations identified in the geotechnical investigation report pertaining to the type of fill materials, foundation design, and general construction activities would be implemented into the proposed project as part of Mitigation Measure GEO-1 to reduce impacts related to unstable soils. Therefore, the proposed project would not be located on unstable soils, and impacts would be less than significant with implementation of Mitigation Measure GEO-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure GEO-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-4 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?

Impact Analysis

The project site is mostly comprised of low plasticity clay, and therefore, expansive soils are potentially present on the project site (AEC 2019a). The proposed project would be required to comply with the latest edition of the California Building Code and implement the recommendations identified in the geotechnical investigation report. The geotechnical investigation report recommends that the presence of expansive soils be confirmed during the foundation excavation. Additionally, the geotechnical investigation report includes recommendations pertaining to the type of fill materials, foundation design, and general construction activities for the project. The proposed project would be required to implement Mitigation Measure GEO-1 and incorporate the recommendations identified in the geotechnical investigation report. As such, compliance with the requirements of the California Building Code and implementation of Mitigation Measure GEO-1 would reduce impacts related to expansive soils to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure GEO-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-5 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?

Impact Analysis

The proposed project would connect directly to the City's municipal sewer system and would not require the construction of septic tanks or any other alternative wastewater disposal system. Therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Analysis

A search of the UCMP database (2019) for mammal fossils did not identify any paleontological resources within the project site. The closest vertebrate fossil sites to the project area, the Arco Arena Site, is an assemblage located approximately 24 miles northeast of the project area. Soils within the project area do not contain strata known to be geologically sensitive for the presence of paleontological resources (e.g., Plio-Pleistocene age sedimentary rock or

various marine sediments). Therefore, the proposed project would not have an impact on any known or potential paleontological resources or unique geologic features.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.8 GREENHOUSE GASES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.8.1 Environmental Setting

The issue of combating climate change and reducing GHG emissions has been the subject of substantial state legislation (Assembly Bill [AB] 32, AB 1493, AB 398, and Senate Bill [SB] 375, SB 32, SB 350, SB 100, SB 1368, SB 350, SBX 7-7) and Executive Orders ([EO] B-30-15, EO B-55-18, EO S-01-07, EO S-13-08).

The City adopted its General Plan Update and ECAS on August 11, 2015 (City of Vacaville 2015b). The ECAS was created for Vacaville in compliance with state requirements that address the reduction of major sources of GHG emissions. The ECAS is a detailed, long-range strategy to reduce GHG emissions and achieve greater conservation of resources with regards to transportation and land use, energy, water, solid waste, and open space. Implementation of the ECAS is intended to guide the City's actions through a series of community-wide and municipal GHG emissions reduction measures to decrease the City's contribution to GHG emissions. Community-wide GHG emission reduction measures are exclusively aimed to increase energy independence; reduce spending on gas, electricity, and water; and improve air quality from non-City operations. Municipal GHG emission reduction measures apply exclusively to City operations.

Greenhouse Gases

Greenhouse gases and climate change are cumulative global issues. The CARB and EPA regulate GHG emissions within the State of California and the U.S., respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds in the Earth's atmosphere act as GHGs as they absorb and emit radiation within the thermal infrared range. When radiation from the sun reaches the earth's surface, some of it is reflected back into the atmosphere as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy from the sun to the earth's surface should be approximately equal to the amount of energy radiated back into space, leaving the temperature of the earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide [CO_2], methane [CH_4], and nitrous oxide [N_2O]), while others are exclusively human made (like gases used for aerosols).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

Carbon Dioxide

Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane

Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide

Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases

Hydrofluorocarbons, perfluorinated chemicals, and Sulfur hexafluoride are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high global warming potential gases.

Emissions Inventories and Trends

According to the CARB's recent GHG inventory for the state, released 2019, California produced 424 million metric tons of carbon dioxide equivalent ($MTCO_2e$) in 2017 (CARB 2019b). The major source of GHGs in California is transportation, contributing approximately 40.1 percent of the state's total GHG emissions in 2017.

Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur and exacerbate environmental impacts, including but not limited to changes to precipitation and runoff patterns, increased agricultural demand for water, inundation of low-lying coastal areas by sea-level rise, and increased incidents and severity of wildfire events (Moser et al. 2009). Cooling of the climate may have the opposite effects. Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial and manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Regulatory Requirements

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The governor has also issued several EOs related to the state's evolving climate change policy. Of particular importance are AB 32 and SB 32, which outline the state's GHG reduction goals of achieving 1990 emissions levels by 2020 and a 40 percent reduction below 1990 emissions levels by 2030.

In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans.

3.8.2 Methodology

Thresholds

As discussed in Section 3.3, Air Quality, the proposed project is located within the YSAQMD; therefore, the YSAQMD thresholds are the most appropriate to use for the proposed project; however, the YSAQMD has not established quantitative significance thresholds for GHGs. The YSAQMD recommends that lead agencies analyze GHGs for larger projects as a part of the full CEQA analysis. The SMAQMD, which is located within the same regional air basin, has established quantitative significance thresholds of 1,100 $MTCO_2e$ per year for the construction or operational phases of land-use projects. Recommended thresholds were developed by the SMAQMD to ensure that at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation; thereby contributing to GHG emissions reduction goals of AB 32 and the scoping plan (SMAQMD 2018). The BAAQMD similarly established 1,100 $MTCO_2e$ for project operations as a screening level for ensuring that 90 percent of the new GHG emissions would be reviewed and assessed for mitigation (BAAQMD 2017). Projects below the 1,100 $MTCO_2e$ threshold would have a less than significant cumulative impact on GHGs.

Most of the City limits are within the YSAQMD, and a small part of the City limits are within the BAAQMD. The YSAQMD does not yet have its own GHG standards; however, the BAAQMD has a regional Climate Protection Program with measures to help meet GHG reductions. The YSAQMD has allowed projects to use the BAAQMD GHG emissions thresholds while the YSAQMD develops its own GHG standards and criteria. Notably, the BAAQMD GHG standards are based on AB 32 reduction targets to achieve 2020 emission limits. BAAQMD is in the process of updating its GHG thresholds.

The City has an adopted ECAS Plan (August 2015) that was created for the city to follow state requirements that address the reduction of major sources of GHG emissions. The ECAS established a strategy that can be implemented by the City and the community to achieve the City's GHG emission reduction target, as identified and required by state legislation. The ECAS identified a 21.7 percent reduction from Business-as-Usual (BAU) emission in 2020 to be consistent with the reduction target established by AB 32, which is to limit California's GHG emissions to 1990 levels by the year 2020. The BAU forecast refers to a scenario in which neither California nor the U.S. Government adopts any measures to reduce GHG emissions. Since the adoption of the ECAS, the state has adopted a new scoping plan to be consistent with AB 32, which identified a new GHG reduction target of 40 percent below 1990 levels by 2030.

Additionally, the California Supreme Court's decision in Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farm (2015) 224 Cal.App4th 1105 (CBD v. CDFW) also known as the "Newhall Ranch case," clarified that substantial evidence needs to be provided to document that project-level



reductions in comparison to a BAU approach would be consistent achieving AB 32's overall statewide reduction goal. The Court identified potential options for evaluating GHG impacts for individual development projects, which included the use of GHG efficiency metrics. In general, GHG efficiency metrics can be used to assess the GHG efficiency of an individual project based on a per capita basis or on a service population basis. A GHG efficiency threshold based on service population can be calculated by dividing the GHG emissions inventory goal (allowable emissions), by the estimated service population of the individual project. Most recently, the Supreme Court addressed the need to consider GHG reduction thresholds post-2020 in the Cleveland National Forest Foundation v. San Diego Association of Governments (CNFF v. SANDAG).

Methodology

Construction and operational emissions were estimated using CalEEMod version 2016.3.2. The model output and detailed assumptions are provided in Appendix B.

3.8.3 Environmental Impact Analysis

This section discusses potential greenhouse gas impacts associated with the proposed project and provides mitigation measures where necessary.

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

The proposed project may contribute to climate change impacts through its contribution of GHGs. The proposed project would generate a variety of GHGs during construction, including several defined by AB 32, such as CO_2, CH_4, and N_2O from the exhaust of equipment, construction hauling trips, and worker commuter trips.

Constructions Emission Inventory

Construction emissions would be generated from the exhaust of equipment and the exhaust of construction equipment and material delivery trips and worker commuter trips. $MTCO_2e$ emissions during construction of the project are presented in Table 3.8-1.

Table 3.8-1: Construction Greenhouse Gas Emissions

2020-2021	$MTCO_2e$
Total Construction $MTCO_2e$	357.43
YSAQMD significance thresholds	1,100
Significant Impact?	No

Note:
$MTCO_2e$ = metric tons of carbon dioxide equivalent

During the construction of the proposed project, approximately 357 $MTCO_2e$ would be emitted. Estimated construction emissions would not exceed the SMAQMD or BAAQMD recommended significance thresholds; therefore, impacts would be less than significant.

Operational Emission Inventory

Operational or long-term emissions occur over the life of the project. The operational emissions for the proposed project are shown in Table 3.8-2. Sources for operational emissions include the following:

- Motor Vehicles: These emissions refer to GHG emissions contained in the exhaust from the cars and trucks that would travel to and from the project site.
- Natural Gas: These emissions refer to the GHG emissions that occur when natural gas is burned on the project site. Natural gas uses include heating water, space heating, dryers, stoves, or other uses.
- Indirect Electricity: These emissions refer to those generated by offsite power plants to supply electricity required for the project.
- Water Transport: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.
- Waste: These emissions refer to the GHG emissions produced by decomposing waste generated by the project. These include waste removed from car interiors during the cleaning process; waste generated in the restrooms; and waste generated from the operations of the facility.

The CalEEMod default assumptions were used for each of these sources of emissions except where applicant usage estimates exceeded the CalEEMod default value. The operational emissions are shown in Table 3.8-2.

Table 3.8-2: Operational Greenhouse Gas Emissions

Source Category	$MTCO_2e$
Area	0.005
Energy Consumption	266.3
Mobile	456.9
Solid Waste Generation	29.46
Water Usage	22.93
Total	**775.6**
YSAQMD significance threshold	*1,100*
Significant Impact?	No

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalent
YSAQMD = Yolo-Solano County Air Quality Management District

During operation of the proposed project, approximately 775.6 $MTCO_2e$ would be emitted. Estimated operational emissions would not exceed the SMAQMD or BAAQMD recommended significance thresholds; therefore, impacts would be less than significant.

Post-2020 Emissions Impact

Given the recent legislative attention and case law regarding post-2020 goals and the scientific evidence that additional GHG reductions are needed through 2050 to stabilize CO_2 concentrations, the Association of Environmental Professionals' Climate Change Committee (2015) recommended in its Beyond 2020: The Challenges of Greenhouse Gas Reduction Planning by Local Governments in California (AEP 2015) white paper that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future,

but that long-term projects should consider, "post-2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target." The Beyond 2020 white paper further recommends that the, "significance determination… should be based on consistency with 'substantial progress' along a post-2020 trajectory."

The BAAQMD has developed a bright-line threshold of 1,100 $MTCO_2e$ for determining whether projects would generate significant GHG emissions. While it is understood that this threshold was developed for projects operational prior to 2020, the BAAQMD has not yet updated their GHG significance thresholds past this date. The Sacramento Metropolitan Air Quality Management District also operates with a bright line significance threshold of 1,100 $MTCO_2e$ for which no operational dates are specified. Finally, the South Coast Air Quality Management District specifies a bright-line threshold of 3,000 $MTCO_2e$ for operational significance. As shown above in Table 3.8-2, the total GHG emissions generated by the proposed project would be 775.6 $MTCO_2e$ and would not exceed the YSAQMD threshold of 1,100 $MTCO_2e$. Many California air quality management districts are currently updating their GHG thresholds to meet GHG reduction goals pursuant to 2050 targets; therefore, in the absence of beyond 2020 thresholds, consistency with 'substantial progress' along a post-2020 trajectory was used as a significance determination for the proposed project. In addition to being below the BAAQMD, SMAQMD, and South Coast Air Quality Management District bright line significance thresholds, the project would be consistent with the City of Vacaville ECAS and the CARB Scoping Plan 2017 update for emissions reductions by 2030, as discussed in Impact GHG-2. Therefore, it is assumed that the project would meet or fall below trajectory, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis
California Air Resources Board adopted its Scoping Plan with measures and other federal, state, and local efforts to reduce GHG emissions by 2020. None of the measures listed in the plan directly relate to construction activity. Although the Scoping Plan does include some measures that would indirectly address GHG emissions levels associated with construction activity—including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low carbon fuel standard—successful implementation of these measures would predominantly depend on the development of future laws and policies at the state level. The proposed project would comply with any mandate or standards set forth by the Scoping Plan update.

In 2015, the City adopted an ECAS to address the reduction of major sources of GHG emissions. An emission target was adopted of 21.7 percent below the City's 2020 business as usual forecast. The 21.7 percent was established to be consistent with CARB's 2020 reduction target. To meet this goal, the City adopted community-wide measures to reduce emissions. Community-wide measures include the following sectors: transportation and land use, green building, renewable energy and low carbon fuels, energy conservation, water and wastewater, solid waste, parks, open space and agriculture, purchasing, and community action. The proposed project would comply with all relevant

measures in the ECAS. Since the adoption of the ECAS, the CARB has adopted a new scoping plan (CARB 2017e) to be consistent with AB 32, which identified a new GHG reduction target of 40 percent below 1990 levels by 2030.

The proposed project would not conflict with any applicable plans, policies, or regulations adopted for the purposes of reducing GHG emissions. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely-hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to *Government Code Section 65962.5* and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

3.9.1 Environmental Setting

Hazardous materials, as defined by CCR, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic: Causes human health effects
- Ignitable: Has the ability to burn
- Corrosive: Causes severe burns or damage to materials
- Reactive: Causes explosions or generates toxic gases

Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust.

California Government Code Section 65962.5 requires the California EPA to compile, maintain, and update specified lists of hazardous material release sites. The required lists of hazardous material release sites are commonly referred to as the "Cortese List," which are contained on internet websites, including the online EnviroStor database from the Department of Toxic Substances Control (DTSC) and the online GeoTracker database from the State Water Resources Control Board (SWRCB). These two databases include hazardous material release sites along with other categories of sites or facilities specific to each agency's jurisdiction. A Phase I assessment was prepared for the proposed project by Achievement Engineering Corp., on August 14, 2019, which included review of several hazardous materials databases.

According to the Phase I assessment, the project site is not listed as a hazardous material release site in any database that was searched (AEC 2019b). Additionally, the Phase I assessment identified the following three sites within 1 mile of the project site that are listed:

- Kaiser Permanente Medical Center, located across the street from the project site, has an underground storage tank (UST) and is listed as a small quantity generator (handler). By being categorized as a small quantity generator (handler), it means that the medical center generates more than 100 kilograms and less than 1,000 kilograms of hazardous waste during any calendar month and accumulates less than 6,000 kilograms of hazardous waste at any time; or generates 100 kilograms or less of hazardous waste during any calendar month and accumulates more than 1,000 kilograms of hazardous waste at any time (AEC 2019b).
- Kaiser Permanente Medical Center Helipad, approximately 446 feet northeast of the project site, has a UST and is also a small generator of hazardous waste. The UST has been in compliance since 2015 (AEC 2019b).
- North Village Elementary, located approximately 4,179 feet northeast of the project site, is listed on Envirostor. The cleanup status for this site is listed on Envirostor as no action required, as of June 13, 2002 (DTSC 2019). Based on review of aerial imagery as provided by Google Earth, the North Village Elementary location has been developed as a single-family subdivision and part of the City's North Village Specific Plan. Development of the North Village Specific Plan was approved by the City Council on August 9, 2016 (City of Vacaville 2019b).

The closest public airport is the Nut Tree Airport, approximately 1.25 miles southwest of the project site. Travis Airforce Base is approximately 8 miles south of the project site. The closest private airport is the helipad at the Kaiser Permanente Medical Center located across the street from the project site. According to the California Department of Forestry and Fire Protection (CALFIRE), the City is not located in a local or state fire hazard severity zone (CALFIRE 2007).

3.9.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, online regulatory compliance databases, and the Phase I assessment prepared by Achievement Engineering Corp. on August 14, 2019. The Phase I assessment is provided in Appendix H.

3.9.3 Environmental Impact Analysis

This section discusses potential impacts related to hazards and hazardous materials associated with the proposed project and provides mitigation measures where necessary.

Impact HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact Analysis

The proposed project would involve the development of a four-story hotel with 107 guest rooms and other onsite guest amenity areas such as an indoor swimming pool, fitness room, and dining/community gathering room. During the construction phase, limited amounts of hazardous materials would be used, including standard construction materials such as concrete, paints, solvents, and heavy construction equipment that would contain diesel fuels and oils. The project contractor would be required to comply with all applicable federal, state, and local laws related to the transport, use, or disposal of hazardous materials, as overseen by the California EPA and DTSC. Hazardous materials used during operation of the proposed hotel would be similar to those commonly found in residential and office uses such as cleaning products, paints, oils, and pesticides for landscaping maintenance activities. These common household hazardous materials would be used in limited quantities and would not create a substantial hazard to the public or the environment. Therefore, impacts related to the routine transport, use, and disposal of hazardous materials during project construction and operation would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-2 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?

Impact Analysis

The proposed project involves the development of a four-story hotel. The project site is undeveloped, and therefore, the proposed project would not include any activities associated with the demolition of structures prior to the 1980s, which would pose a hazard regarding asbestos containing materials or lead-based paints. As discussed in Impact HAZ-1, project construction and operation activities would involve limited use of common hazardous materials, including paints, solvents, fuels, oils, cleaners, and pesticides. The use of these substances is not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset or accident. The proposed project would be required to comply with applicable federal, state, and local laws pertaining to the safe handling, storage, and transport of hazardous materials. In addition, during construction activities, the applicant would be required to implement a SWPPP to prevent contaminated runoff from leaving the project site. The implementation of the SWPPP would be incorporated into the proposed project as Mitigation Measure HYD-1. Therefore, impacts related to the release of hazardous materials into the environment would be less than significant with the implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact HAZ-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact Analysis
The project site is not located within 0.25 mile of an existing or proposed school. The nearest school is the Solano Community College Vacaville Center approximately 0.5 mile north of the project site. In addition, Browns Valley Elementary School, part of the Vacaville Unified School District, is approximately 3 miles southwest of the project site. The proposed project does not involve the development of a use that would emit hazardous materials, substances, or waste during operation. The use of heavy equipment and activities involving hazardous materials would be limited to the construction phase and confined to construction areas and within existing roadways. The use of hazardous materials would also be regulated by health and safety requirements under federal, state, and local laws, including handling, storage, and disposal of the materials, as well as emergency spill response. As such, the proposed project would have a less than significant impact related to the emission or handling of hazardous materials near a school.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact HAZ-4 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?

Impact Analysis
The project site is not included on a list of hazardous materials sites pursuant to Government Code Section 65962.5 (AEC 2019b). The Phase I assessment identified three sites within 1 mile of the project site that are listed on hazardous materials databases: Kaiser Permanente Medical Center, Kaiser Permanente Medical Center Helipad, and the North Village Elementary School (AEC 2019b). The Kaiser Permanente Medical Center and Kaiser Permanente Medical Center Helipad are listed as having a UST and as a small generator (handler). The North Village Elementary school is listed on Envirostor; however, the cleanup status for this site is listed as no action required as of June 13, 2002 (DTSC 2019). Furthermore, the North Village Elementary School site has been developed as a single-family subdivision part of the City's North Village Specific Plan. The Phase I assessment determined no record of release or leak of hazardous waste or non-compliance was found at the project site or neighboring services and businesses; therefore, no evidence of a recognized environmental condition exists at the project site (AEC 2019b). The proposed project would not create a significant hazard to the public or the environment, and no impact would occur.



Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact HAZ-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Impact Analysis
The Nut Tree Airport is approximately 1.25 miles southwest of the project site. According to the Nut Tree Airport Master Plan, the project site is located within airport land use compatibility Area E (adjacent to runway or final approach) (Solano County 2010). The proposed project would be approximately 43 feet in height, which is below the aviation related standards for maximum height in the Vaca Valley Business Park Policy Plan area, which is established at 263 feet in height (City of Vacaville 2017). The project site is also within Influence Zone D of the Travis Air Force Base located approximately 8 miles to the south. Within this zone, any proposed development over 200 feet requires airport land use compatibility review and review by the Federal Aviation Administration (FAA) per Federal Aviation Regulation Part 77 (Solano County ALUC 2002). The height of the proposed project is below 200 feet and would not require review by the Solano County Airport Land Use Commission or the FAA. As such, the proposed project would not result in a safety hazard for people residing or working in the project area, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact HAZ-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact Analysis
The proposed project would not involve permanent modification of existing roadways. Construction equipment and materials would be stored onsite or on the undeveloped area north of the project site, adjacent to New Horizons Way. Construction activities are anticipated to be confined to the project site, and no road closures or detours are anticipated. Therefore, project construction and operation activities would not interfere with an emergency evacuation or response plan, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-7 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact Analysis

The project site is in northeast Vacaville within the Vaca Valley Business Park Policy Plan area. This portion of the City is an urbanized area and has been partially developed with office, medical, and research uses. According to the General Plan, highly flammable vegetation and warm dry summers create the potential for wildland fires in the City. High hazard areas in the City include outlying residential parcels and open lands adjacent to residential areas. Open agricultural lands in eastern the City also pose a threat related to grass fires as they can travel very fast and threaten nearby residential areas (City of Vacaville 2015a). Based on review of Fire Hazard Severity Zone maps developed by CALFIRE, the project site is not within or near a state responsibility area and does not contain lands classified as very high fire hazard severity zones (CALFIRE 2007). The proposed project would be required to comply with the safety development standards of the Vaca Valley Business Park Policy Plan, which require new developments to install and maintain adequate safety devices to reduce risk of potential incidents such as fire. The Vaca Valley Business Park Policy Plan also requires new developments to comply with the Uniform Fire Code, Uniform Building Code, and all applicable state and federal regulations (City of Vacaville 2017). The proposed project would comply with the safety development standards of the Vaca Valley Business Park Policy Plan and install a new 8-inch water line for fire suppression. As such, the proposed project is not expected to be exposed to risks associated with wildland fires, and impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.10 HYDROLOGY AND WATER QUALITY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or offsite;	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
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	☐	☒	☐	☐
iv) Impede or redirect flood flows	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

3.10.1 Environmental Setting

Climate and Precipitation

The City's climatic conditions are consistent with the temperate conditions that dominate the Sacramento Valley. The summers are hot and dry, and the winters are cool and moist. Average monthly temperatures range from 40 to 50 °F during the winter months, and 60 to100 °F during the summer months. The predominant rainfall season is from November through April, with the heaviest storms occurring from December through February. Spatial rainfall distribution over the Vacaville area consists of higher intensities and volumes in the upper elevations of the western portion of the Ulatis Creek watershed and lower intensities and volumes to the east. Mean annual precipitation varies

from 45 inches at the ridgeline of the Vaca Mountains to 23 inches in the flat southeastern portion of the watershed near Elmira (City of Vacaville 2013).

Watershed and Regional Drainage

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. The City contains four sub-watershed areas (the Alamo Creek, Ulatis Creek, Horse Creek, and Gibson Canyon Creek watersheds), all of which are part of the larger, 150-square-mile Ulatis Creek watershed. In general, the creeks flow in an east-southeasterly direction and ultimately drain into the Sacramento River via Cache Slough (City of Vacaville 2013). According to the Vaca Valley Business Park Policy Plan, drainage within the plan area is generally in the southeasterly direction. Stormwater is conveyed through pipes, culverts, channels, and the existing open channel of Horse Creek and its tributaries. Horse Creek is located about 135 feet south of the project site.

Groundwater

The City primarily overlies the northwest portion of the Solano Sub-basin of the Sacramento Valley Groundwater Basin. A small area in the southern portion of the City overlies the Suisun-Fairfield Valley Basin, in the San Francisco Bay Hydrologic Region, but the City does not own or operate any wells within the area. The western portion of the City is in the Sacramento River Hydrologic Study Area but does not overlie any area currently designated by California Department of Water Resources as a groundwater basin or sub-basin. All of the City's existing and proposed municipal wells are located exclusively in the Solano Sub-basin (City of Vacaville 2016).

The state has designated the Solano Sub-basin as a medium-priority basin per the Sustainable Groundwater Management Act. Therefore, preparation of a Groundwater Sustainability Plan is required by January 31, 2022. The City formed a Groundwater Sustainability Agency in April 2017 to manage groundwater resources beneath and within City limits. Accordingly, the City is working with other local agencies to prepare a Groundwater Sustainability Plan (City of Vacaville 2019b).

Water Quality

Water quality refers to the chemical, biological, and physical characteristics of water. The water quality within a watershed is influenced by surrounding land uses, geographic features, rainfall intensity, vehicle traffic, and percentage of impervious surfaces. During the seasonal dry period between May to October, pollutants such as vehicle exhaust, oil and gasoline spills, and atmospheric fallout accumulate within the watershed. During the seasonal wet period between November to April, precipitation can displace these pollutants into stormwater runoff and increase pollutant concentrations at the beginning of the season (City of Vacaville 2013).

Flooding

Flood hazard zones are identified on official Flood Insurance Rate Maps (FIRM) issued by the Federal Emergency Management Agency (FEMA). The project site is designated as Zone X. Zone X is defined as areas outside of the 100-year floodplain zone that also have a 0.2-percent probability of flooding in a given year (FEMA 2019a). According to the General Plan, the area immediately south of the project site near Horse Creek Drive was previously indicated as Zone A, which is considered to be within a 100-year floodplain. However, this area was reconsidered by FEMA to be Zone X as part of a letter of map revision process effective July 1, 2019 (FEMA 2019b). According to FEMA, in situations where a property owner thinks that their property was inadvertently mapped in a high-risk flood area on a



FIRM, FEMA provides a process for the public to request a change in the flood zone designation for the property (FEMA 2019c). Other areas surrounding Horse Creek to the southeast, toward I-80 are still designated as Zone A.

Seiches, Dam Inundation, and Tsunamis

Seiches are standing waves oscillating in a landlocked body of water, typically caused by strong winds or seismic ground shaking. According to the Vacaville General Plan EIR, the City is not at risk from seiches because there are no major landlocked bodies of water within or near the City (City of Vacaville 2013).

A dam can pose a potential risk of failure particularly during seismic events or ground shaking, which can threaten the area below the dam with inundation. The northeastern portion of the City is within a potential dam failure inundation zone for the Monticello dam (City of Vacaville 2013).

Tsunamis are tidal waves created by undersea fault movement. These waves are fast moving, create large swells of water, and upon reaching the coast can sweep inland with a large amount of force. The City is located more than 10 miles inland from Suisun Bay, the nearest large body of water; therefore, the City is not at risk for tsunamis (City of Vacaville 2013).

3.10.2 Methodology

The evaluation of potential hydrologic and water quality impacts was based on a review of City documents, including the General Plan, General Plan EIR, and 2015 Urban Water Management Plan (UWMP). Mapping tools provided by FEMA were also reviewed. The information obtained from these sources are summarized to establish existing conditions and to identify potential environmental effects. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local ordinances and regulations.

3.10.3 Environmental Impact Analysis

This section discusses potential impacts related to hydrology and water quality associated with the proposed project and provides mitigation measures where necessary.

Impact HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Impact Analysis

Construction activities would include site clearing, grading, utility connections (e.g., new lateral connections to the existing water, sewer, and storm drain mains in East Akerly Drive), building construction, frontage improvements (e.g., new curb, gutter, sidewalk and driveway construction), and landscaping onsite. Construction activities would involve grading of the entire project site and the permanent disturbance of the 2.26-acre site. These activities have the potential to generate stormwater runoff and to discharge pollutants, such as fuel, solvents, oil, paints, and trash, into the City's storm drain system. The proposed project would comply with the NPDES General Construction Permit. The NPDES General Construction Permit includes the preparation of a SWPPP and incorporation of BMPs to control sedimentation, erosion, and hazardous materials from contacting stormwater, with the intent of keeping all products of erosion from moving offsite into receiving waters. The SWPPP and applicable BMPs have been incorporated into Mitigation Measure HYD-1 to reduce potential water quality impacts to a less than significant level. The proposed project would comply with the provisions of the City's Grading Ordinance (Chapter 14.19) and the City's urban stormwater quality management and discharge control regulations (Chapter 14.26). The City's urban stormwater

quality management and discharge control regulations implement the requirements of the Central Valley Regional Water Quality Control Board Order 2013-0001-DWQ to reduce pollutants in stormwater discharges.

The proposed project would change the undeveloped lands at the project site to a hotel land use. The proposed project would create 78,253 square feet of impervious surface at the project site. This increase in impervious surface at the project site would alter the type and level of pollutants in stormwater runoff from the project site. Stormwater runoff from building rooftops, parking lot areas, sidewalks, access roads, and landscaped areas would potentially contain oils, grease, fuels, byproducts of combustion, pesticides, fertilizers, and herbicides.

To control stormwater runoff, the proposed project would include the installation of a 12-inch-diameter storm drain along the project boundary to connect to the existing storm drain along East Akerly Drive. The proposed project would also include approximately 17,356 square feet of pervious surface, consisting of landscaping and bioswales, along the project site boundary. Stormwater generated at the project site would be directed and treated in the landscaped areas and the bioswales. As such, the proposed project would comply with Chapter 14.26.030 of the City's Municipal Code and would incorporate post-construction BMPs to prevent, control, and reduce the volume of pollutants in stormwater runoff. The proposed drainage system improvements would be designed and constructed in accordance with the City's Standard Specifications, Utility Master Plans, General Plan, and Vaca Valley Business Park Policy Plan. As such, operation of the proposed project would have a less than significant impact related to water quality degradation.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM HYD-1: **Prepare and Implement a SWPPP.** Prior to the issuance of any construction-related permits, the applicant shall prepare and submit a Notice of Intent (NOI) to the SWRCB and prepare a SWPPP in compliance with the NPDES General Construction Permit. The SWPPP shall include a detailed, site-specific listing of the potential sources of stormwater pollution; pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills); description of the type and location of erosion and sediment control BMPs to be implemented at the project site; and a BMP monitoring and maintenance schedule to determine the amount of pollutants leaving the project site. A copy of the SWPPP must be current and remain onsite. Water quality BMPs identified in the SWPPP could include but are not limited to the following:

- Surface water runoff shall be controlled by directing flowing water away from critical areas and by reducing runoff velocity. Diversion structures, such as terraces, dikes, and ditches, shall collect and direct runoff water around vulnerable areas to prepared drainage outlets.
- Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.
- Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out. Construction materials, including topsoil and chemicals, shall be stored, covered, and isolated to prevent runoff losses and contamination of groundwater.

- Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events.
- Fuel and vehicle maintenance areas shall be established away from all drainage courses, and these areas shall be designed to control runoff.
- Temporary erosion control measures, such as silt fences, staked straw bales, and temporary revegetation, shall be employed for disturbed areas. No disturbed surfaces will be left without erosion control measures in place during the winter and spring months.
- A spill prevention and countermeasure plan shall be developed to identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used onsite. The plan will also require the proper storage, handling, use, and disposal of petroleum products.
- Construction activities shall be scheduled to reduce land disturbance during peak runoff periods and to the immediate area required for construction. Soil conservation practices shall be completed during the fall or late winter to reduce erosion during spring runoff. Existing vegetation will be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.

Level of Significance After Mitigation

Less Than Significant with Mitigation.

Impact HYD-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact Analysis

The proposed project would not use groundwater supplies for construction or operation. In addition, according to the General Plan, the Solano Sub-basin is not considered to be in a state of critical condition of overdraft. As part of the geotechnical investigation, three soil borings were taken at the project site. At approximately 5 feet bgs, the soil borings encountered generally moist, very stiff, light brown lean clay with sand, which was followed by moist, hard, light brown lean clay, at approximately 36 feet bgs. Groundwater was encountered at the project site at approximately 13 to 16 feet bgs (AEC 2019). However, no dewatering or excavation activities would be required as part of the project that would affect existing groundwater or decrease groundwater supplies.

The proposed project would create 78,253 square feet of impervious surface at the project site, which would potentially impact groundwater because areas currently available for the infiltration of rainfall would be reduced. The proposed project would incorporate 17,356 square feet of pervious surface at the project site consisting of landscape planters and bioswales along the project boundaries. Therefore, the proposed project would not substantially interfere with local groundwater recharge. In addition, the drainage system improvements would be designed and constructed in accordance with the City's Standard Specifications, Utility Master Plans, General Plan, and Vaca Valley Business Park Policy Plan. Impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or offsite;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

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;

iv) Impede or redirect flood flows

Impact Analysis

i) Result in substantial erosion or siltation on- or offsite;

Construction of the proposed project would include ground-disturbing work that would involve grading of the entire project site, and the permanent disturbance of the 2.26-acre site. As a result, construction activities could result in erosion-related impacts. The proposed project would implement Mitigation Measure HYD-1, including preparation of a SWPPP in accordance with the NPDES General Construction Permit. The SWPPP would include BMPs, which would be implemented during construction activities to reduce the potential of erosion.

The proposed project would change the existing undeveloped project site to a hotel land use. As a result, the proposed project would potentially alter the existing drainage pattern from the increase in impervious surface. In addition to the installation of a 12-inch-diameter storm drain, the proposed project would install 17,356 square feet of pervious surface consisting of landscape planters and bioswales. These features would collect impervious surface runoff prior to entering the piped storm drain system and would provide treatment, retention, and/or detention at the project site to reduce the volume of stormwater runoff and erosion impacts. With implementation of Mitigation Measure HYD-1, the impact would be less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

The proposed project would change the existing undeveloped project site to a hotel land use. As a result, the proposed project would create 78,253 square feet of impervious surface at the project site. This increase in impervious surface at the project site would increase the amount of stormwater runoff from the project site. To control stormwater runoff, the proposed project would install a 12-inch-diameter storm drain along the project boundary to connect to the existing storm drain along East Akerly Drive. The proposed project would also include approximately 17,356 square feet of pervious surface consisting of landscaping and bioswales along the project site boundary. Stormwater at the project site would be diverted to the landscaped areas and bioswales, which would control the volume of stormwater at the project site to reduce the potential for flooding. Therefore, the proposed project would not result in on- or offsite flooding, and the impact would be less than significant.



iii) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

As described above, construction activities would have the potential to generate stormwater runoff and to discharge pollutants, such as fuel, solvents, oil, paints, and trash, into the City's storm drain system. In addition, the increase in impervious surface resulting from project implementation would alter the type and level of pollutants in stormwater runoff from the project site. During construction activities, the proposed project would conform to the requirements of the NPDES General Construction Permit, which involves the preparation and implementation of a SWPPP. The SWPPP would specify BMPs to incorporate during construction to prevent, control, and reduce polluted runoff from entering the City's storm drain system and waterways. Implementation of these BMPs would be part of Mitigation Measure HYD-1.

As required by Chapter 14.26.010 of the City's Municipal Code, urban stormwater quality management and discharge control requirements would be implemented as part of the proposed project. In addition, stormwater generated at the project site would be directed and treated in the landscaped areas and the bioswales prior to entering the piped storm drain system. The proposed storm drainage improvements would be designed and constructed in accordance with the City's Storm Drain Standard Specifications. The impacts would be less than significant with Mitigation Measure HYD-1 incorporated.

iv) Impede or redirect flood flows

The project site is designated as Zone X. Zone X is defined as areas outside of the 100-year floodplain zone that have a 0.2-percent probability of flooding in a given year (FEMA 2019a). The project is not located within a dam inundation zone; therefore, the proposed project would not impede or redirect flood flows, and there would be no impact.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Impact Analysis
The project site would not be susceptible to seiche, tsunami, or mudflow. Seiches affect locations adjacent to larger water bodies such as lakes or reservoirs; the project site is not located near any such water body. The project site is located more than 45 miles from the Pacific Ocean and more than 10 miles from Suisun Bay, substantially reducing the potential for impacts from tsunamis. As noted above, the project site is not located within a flood hazard zone. As a result, there would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact Analysis

The State Department of Water Resources identified the Solano Sub-basin as a medium-priority basin. Therefore, the City formed a Groundwater Sustainability Agency in April 2017 to manage groundwater resources beneath and within City limits. Accordingly, the City is working with other local agencies to prepare a Groundwater Sustainability Plan (City of Vacaville 2019b). The Groundwater Sustainability Plan for the Solano Sub-basin is still under development and has not been approved. Therefore, the proposed project would not conflict with or obstruct implementation of a sustainable groundwater management plan.

The proposed project is required to comply with the policies and objectives of the Water Quality Control Plan for the Central Valley RWQCB. As discussed, the proposed project would be required to implement Mitigation Measure HYD-1 and obtain coverage under the NPDES Construction General Permit requiring preparation of a SWPPP. The SWPPP would be implemented during construction and would incorporate BMPs that meet the requirements of the Central Valley RWQCB's Water Quality Control Plan to reduce potential impacts to water quality. Therefore, the proposed project would not conflict with or obstruct implementation of the Water Quality Control Plan for the Central Valley RWQCB and impacts would be less than significant with implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.11 LAND USE AND PLANNING

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

3.11.1 Environmental Setting

The proposed project is located in northeast Vacaville near the intersection of New Horizons Way and East Akerly Drive. The project site is within the Vaca Valley Business Park Policy Plan area, which is bordered by I-505 to the west, I-80 to the south and east, and Vaca Valley Parkway to the north. The Nut Tree Airport is approximately 1.25 miles southwest of the project site.

The proposed project would be located on APN 0133-120-380 within the Vaca Valley Business Park Policy Plan area. This parcel is approximately 3.41 acres and currently undeveloped. The project site is designated Business Park by the City's General Plan, is within the City's Business Park zoning district, and is located in Area A of the Vaca Valley Business Park Policy Plan. The applicant is requesting to subdivide this parcel; therefore, the project site is defined as the south portion of the parcel, which is approximately 2.26 acres. The project site is surrounded by the following land uses:

- **North.** Undeveloped land is located north of the project site, beyond which lies New Horizons Way, followed by undeveloped land within the Vaca Valley Business Park that is designated Business Park by the City's General Plan.
- **South.** Undeveloped land, identified as APN 0133-120-540, and Horse Creek are located south of the project site. Beyond Horse Creek lies Horse Creek Drive, followed by undeveloped land, which is within the Vaca Valley Business Park and designated Business Park by the City's General Plan. I-80 is approximately 0.25 mile south of the project site.
- **West.** Genentech's Vacaville Campus, which also includes an 8.9-megawatt solar facility, is located west of the project site across Grassland Drive. I-505 is located approximately 0.5 mile west of the project site.
- **East.** Kaiser Permanente Medical Center is located east of the project site across East Akerly Drive.

3.11.2 Methodology

The evaluation of potential land use impacts was based on a review of applicable land use documents, including the City's General Plan, the City's Vaca Valley Business Park Policy Plan, and the Vacaville Municipal Code. This analysis examined the consistency of the proposed project with applicable General Plan policies.

3.11.3 Environmental Impact Analysis

This section discusses potential impacts related to land use and planning associated with the proposed project and provides mitigation measures where necessary.

Impact LU-1 Physically divide an established community?

Impact Analysis

Development of the proposed project would occur within the Vaca Valley Business Park Policy Plan area. As described, the project site is undeveloped and is bordered by mostly undeveloped, medical, and business park land uses between I-505 and I-80. The proposed project would involve development of a hotel that includes 107 guest rooms and other onsite guest amenities, including an indoor swimming pool, fitness room, and dining/gathering area. The proposed project also includes 128 onsite surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities. As part of the project, the applicant proposes to subdivide the parcel (APN 0133-120-380) that is approximately 3.41 acres and construct the proposed project on approximately 2.26 acres. The parcel is entirely undeveloped; therefore, the proposed subdivision would not physically alter an established community. In addition, the proposed project would be accommodated by existing roadways, would not require construction of new roadways for access to the project site, and would not preclude access to adjacent developments. The Vaca Valley Business Park Policy Plan establishes land use and infrastructure policies regarding future planned development contemplated within the plan area such as the proposed project. Therefore, the proposed project would not physically divide an established community, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact LU-2 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?

Impact Analysis

General Plan and Zoning Consistency

According to the General Plan, the Business Park land use designation applies to sites in a landscaped setting for office centers, research-and-development facilities, and under appropriate conditions, medical and institutional uses. Secondary uses may include limited industrial activities, small-scale warehousing and distribution operations, and limited retail sales. Commercial uses and services for employees and businesses (e.g., delicatessens, childcare, dry cleaners, and branch banks) are required as a means of reducing trips and vehicle miles traveled. These uses must be centrally located and have adequate pedestrian access. The commercial uses and services must also be ancillary rather than primary uses, and there must be adequate public infrastructure to support the proposed use. Policy plans and specific plans may additionally allow for commercial development (City of Vacaville 2015a)

The project site is within the City's Business Park zoning district, which provides for large office developments, research facilities, and medical and institutional uses, as well as high-tech industries, light manufacturing, warehousing, and distribution. Some commercial uses are also allowed, as well as some interim agricultural uses (City of Vacaville 2019c).

Nut Tree Airport and Travis Air Force Base Compatibility

The Nut Tree Airport is approximately 1.25 miles southwest and across I-505 from the project site. According to the Nut Tree Airport Master Plan, the project site is located within airport land use compatibility Area E (adjacent to runway or final approach) (Solano County 2010). Chapter 14.09.134 of the Vacaville Land Use and Development Code contains provisions which regulate development in the Vaca Valley Business Park Policy Plan area. These regulations are intended to prevent land use encroachment from affecting the operation of the airport. The Vacaville Municipal Code indicates that acceptable uses within Area E include all uses except schools, hospitals, community care facilities, and residential densities greater than an average of six dwelling units per acre (maximum of 18 dwelling units per acre, achieved through clustering) (City of Vacaville 2019d). The proposed project would not involve development of such prohibited land uses; therefore, the proposed project would be consistent with the Nut Tree Airport Compatibility Area E.

The Travis Air Force Base is located approximately 8 miles south of the project site. The project site is located within the Travis Air Force Base Area of Influence Zone D. Limitations on the height of structures are the only compatibility factors within this zone. Accordingly, any proposed development over 200 feet would require airport land use compatibility review and FAA review per Federal Aviation Regulation Part 77 (Solano County ALUC 2002). The proposed project would be approximately 43 feet tall and would not be located within the Height Review Overlay Zone; therefore, the proposed project would be compatible with the Travis Air Force Base Area of Influence.

Vaca Valley Business Park Policy Plan and Site Development Standards

The project site is located in Area A of the Vaca Valley Business Park Policy Plan. Area A is identified as an essential economic resource for the City as it is visible and accessible from I-505 and I-80. Uses permitted within this area include all permitted uses within the Industrial Park District (Section 14.09.094.030) and uses within the following commercial districts (with the exception of food stores): General Commercial District (Section 14.09.087.030), Neighborhood Commercial District (Section 14.09.088.030), and Office Commercial District (Section 14.09.089.030). Some other related uses are permitted in coordination with the City Planning Department, as well as some accessory uses (City of Vacaville 2017). Where not abutting a residential district, hotels and motels are permitted within the General Commercial District (City of Vacaville 2019e). Table 3.11-1 discusses the proposed project's consistency with the development standards. As shown in the table, the proposed project would meet the required setbacks, height limits, and FAR. No significant impacts would occur to adjacent land uses. The proposed project would be consistent with the development standards established by the Vaca Valley Business Park Policy Plan. In addition, the proposed project would be subject to a design review approval.

Therefore, the proposed project would comply with the requirements and standards listed in the Vaca Valley Business Park Policy Plan. The proposed project would be built in accordance with the development standards and policies contained in the Vaca Valley Business Park Policy Plan.

Table 3.11-1: Vaca Valley Business Park Policy Plan Development Standards Consistency Analysis

Project Features	Proposed Project Development Standards	Vaca Valley Business Park Policy Plan Required Development Standards	Consistent
Height	43 feet	70 feet	Yes
Site area	56,651 square feet	50,000 square feet minimum	Yes
Floor Area Ratio	0.57 FAR	0.3 FAR	Yes (with CUP)
Front Setbacks (East Akerly Drive)	Buildings – 54 feet Landscape/Parking – 32.1 feet	Buildings – 40 feet Landscape/Parking – 30 feet **Minimum building setbacks shall be increased 1 foot for each 3 feet above 20 feet of building height*	Yes

Notes:
CUP = conditional use permit
FAR = floor area ratio

In summary, the proposed project would not conflict with the City's General Plan, zoning ordinance, or the Vaca Valley Business Park Policy Plan, and this impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.12 MINERAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be a 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?	☐	☐	☐	☒

3.12.1 Environmental Setting

According to USGS, the City contains limited mineral resources that are being extracted. Southwest of the project site in the vicinity of Cement Hill, limestone deposits show evidence of some historic use. Stone quarries in the Vaca Mountains produced dimensioned and ornamental stone. The western hills contain sandstone and conglomerates that may be used for sands, gravel, and stone; however, none of these resources are currently being mined (City of Vacaville 2015a).

3.12.2 Methodology

The following analysis is based on a review of the General Plan and the DOC's Division of Mine Reclamation mineral lands classification maps (DOC 1998, 2015).

3.12.3 Environmental Impact Analysis

This section discusses potential impacts on mineral resources associated with the proposed project and provides mitigation measures where necessary.

Impact MIN-1 Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

Impact Analysis

Based on review of the DOC's Mineral Lands Classification map of Aggregate Resources, the project site is not identified within an area containing mineral deposits (DOC 1998, 2015). The project site is undeveloped and within the Vaca Valley Business Park Policy Plan. No mineral extraction activities exist on or the near the site, and mineral extraction is not included as part of the proposed project. Furthermore, the project site is zoned Business Park, which does not allow mineral extraction uses. The proposed project would not result in the loss of availability of a known mineral resource, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact MIN-2 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?

Impact Analysis

The project site is not identified in the General Plan or by the DOC Division of Mine Reclamation as containing valuable mineral resources. Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource recovery site, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.13 NOISE

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

3.13.1 Environmental Setting

Noise Fundamentals and Terminology

Noise is generally defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The perceived loudness of sound is dependent upon many factors, including sound pressure level and frequency content. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called A-weighting, written as dBA and referred to as A-weighted decibels. There is a strong correlation between dBA and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. Table 3.13-1 defines sound measurements and other terminology used in this report, and Table 3.13-2 summarizes typical A-weighted sound levels for different noise sources.

With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 5-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 2007). These subjective reactions to changes in noise levels were developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broadband noise and to changes in levels of a given noise source. These statistical indicators are thought to be most applicable to noise levels in the range of 50 to 70 dBA, as this is the usual range of voice and interior noise levels. Numbers of

agencies and municipalities have developed or adopted noise level standards consistent with these and other similar studies to help prevent annoyance and to protect against the degradation of the existing noise environment.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

For a point source, such as a stationary compressor or construction equipment, sound attenuates based on geometry at a rate of 6 dB per doubling of distance. For a line source, such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (FHWA 2011a, FHWA 2011b). Atmospheric conditions, including wind, temperature gradients, and humidity, can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface, such as grass, attenuates at a greater rate than sound that travels over a hard surface, such as pavement. The increased attenuation is typically in the range of 1-2 dB per doubling of distance. Barriers, such as buildings and topography that block the line of sight between a source and receiver, also increase the attenuation of sound over distance.

Table 3.13-1: Definition of Sound Measurement

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-Weighted Decibel (dBC)	The sound pressure level in decibels as measured using the C- weighting filter network. The C-weighting is very close to an unweighted or flat response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A- and C-weighted level gives an indication of low frequency content.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded xx % of a specific time period. L10 is the sound level exceeded 10% of the time. L90 is the sound level exceeded 90% of the time. L90 is often considered to be representative of the background noise level in a given area.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring

Sound Measurements	Definition
	during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/second.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Source: Federal Highway Administration Construction Noise Handbook, 2006

Table 3.13-2: Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	-110-	Rock band
Jet flyover at 1,000 feet		
	-100-	
Gas lawnmower at 3 feet		
	-90-	
Diesel truck at 50 feet at 50 MPH		Food blender at 3 feet
Noisy urban area, daytime	-80-	Garbage disposal at 3 feet
Gas lawnmower, 100 feet		
Commercial area	-70-	Vacuum cleaner at 10 feet
Heavy traffic at 300 feet		Normal speech at 3 feet
	-60-	
Quiet urban daytime		Large business office
	-50-	Dishwasher in next room
Quiet urban nighttime		
Quiet suburban nighttime	-40-	Theater, large conference room (Background)
Quiet rural nighttime	-30-	Library
	-20-	Bedroom at night, concert hall (Background)
	-10-	Broadcast/recording studio
	-0-	

Notes:
dBA = A-weighted decibels
MPH = miles per hour

Decibel Addition

Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one source produces a sound pressure level of 70 dBA, two identical sources would combine to produce 73 dBA. The cumulative sound level of any number of sources can be determined using decibel addition.

Vibration Standards

Vibration is like noise such that noise involves a source, a transmission path, and a receiver. While related to noise, vibration differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system that is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception, as well as damage to structures, have been developed for vibration levels defined in terms of peak particle velocities. The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential noise impacts associated with implementation of the project.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.13-3 notes the general threshold at which human annoyance could occur is 0.1 inches per second (in/sec) PPV. Table 3.13-4 indicates the threshold for damage to structures ranges from 0.12 to 2.0 in/sec PPV.

Table 3.13-3: Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Severe	2.0	0.4

Notes:
Transient sources create a single isolated vibration event such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.
in/sec = inches per second
PPV = peak particle velocity
Source: California Department of Transportation 2004

Table 3.13-4: Guideline Vibration Damage Potential Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structure	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2004

Operation of heavy construction equipment, particularly pile driving and other impact devices, such as pavement breakers, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance would result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes would decrease with increasing distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as PPV. Table 3.13-5 summarizes typical vibration source levels generated by various construction equipment.

Table 3.13-5: Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet
Vibratory roller	0.210
Large bulldozer	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Notes: PPV = peak particle velocity
Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual, September 2018



Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (FTA 2018). PPVref is the reference PPV from Table 3.13-5:

PPV = PPVref x (25/Distance)^1.5

Noise Regulatory Framework

Federal, state, and local agencies regulate different aspects of environmental noise. Generally, the federal government sets noise standards for transportation-related noise sources closely linked to interstate commerce. These include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to this project. The state government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans identify general principles intended to guide and influence development plans.

State Regulations

California Building Code

Part 2, Title 24 of the CCR California Noise Insulation Standards establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under Section 1207.11 “Exterior Sound Transmission Control,” interior noise levels attributable to exterior noise sources cannot exceed 45 L_{dn} in any habitable room. Where such residences are located in an environment where exterior noise is 60 L_{dn} or greater, an acoustical analysis is required to ensure interior levels do not exceed the 45 L_{dn} interior standard. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the building must also specify a ventilation or air conditioning system to provide a habitable interior environment.

California Green Building Standards (CalGreen)

The 2016 California Green Building Standards Code (CalGreen), Section 5.507 “Environmental Comfort”, will apply to any occupied non-guest room areas of the hotel. CalGreen states the following:

- 5.507.4.1 Exterior noise transmission. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite Sound Transmission Class (STC) rating of at least 50 or a composite Outdoor/Indoor Transmission Class (OITC) rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:

    1. Within the 65 CNEL noise contour of an airport.

    Exceptions:

    1. L_{dn} or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone plan.

    2. L_{dn} or CNEL for other airports and heliports for which a land use plan that has not been developed shall be determined by the local general plan noise element.

3. Within the 65 CNEL or L_{dn} noise contour of a freeway or expressway, railroad, industrial source, or fixed-guideway notice source as determined by the Noise Element of the General Plan.

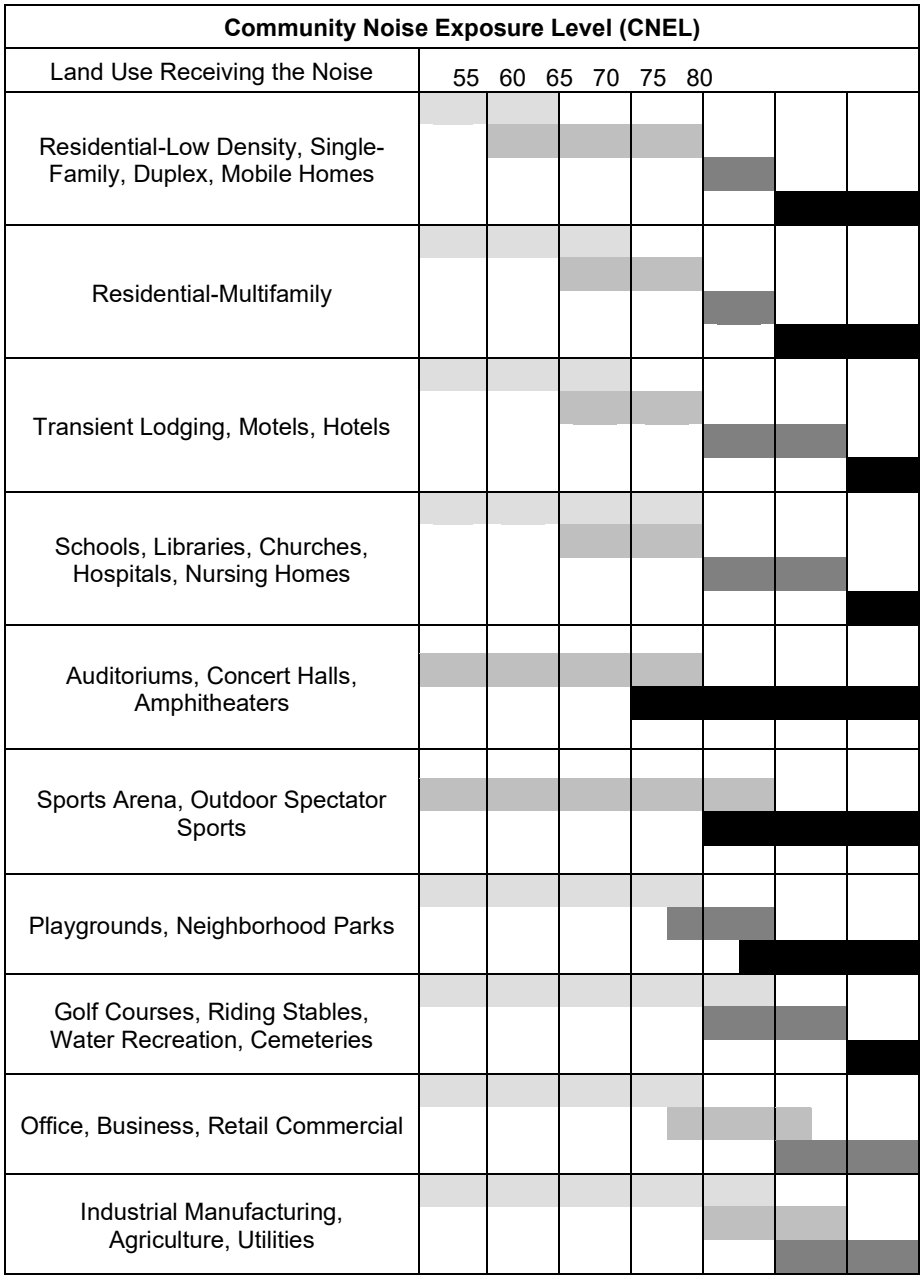
- 5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB hourly equivalent sound level (L_{eq}-1-hr) during any hour of operation shall have building, addition, or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).
- 5.507.4.2 Performance method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an L_{eq}-1-hr of 50 dBA in occupied areas during any hours of operations.
- 5.507.4.2.1 Site features. Exterior features, such as sound walls or earth berms, may be used as appropriate to the building addition or alteration project to mitigate sound migration to the interior.
- 5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting compliance of interior sound levels shall be prepared by personnel approved by the architect or engineer of record.
- 5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Local Regulations

City of Vacaville General Plan

The Noise Element of the City of Vacaville General Plan identifies land use compatibility noise standards for noise-sensitive land uses affected by transportation and non-transportation noise sources. As shown in Table 3.13-6, for noise-sensitive lodging, hotel, and motel land uses that are affected by transportation noise sources, the normally acceptable exterior noise level is 50-65 dBA L_{dn}/CNEL. Exterior noise levels of up to 70 dBA L_{dn}/CNEL for hotel land uses is considered conditionally acceptable provided that needed noise mitigation measures have been incorporated, and interior noise levels are maintained within normally acceptable levels. Exterior noise levels between 70 dBA and 80 dBA L_{dn}/CNEL are considered normally unacceptable. New construction with exterior noise levels in this range would require a detailed analysis of the noise reduction requirements and noise insulation features to be incorporated in the project to maintain normally acceptable interior noise levels.

Table 3.13-6: Noise and Land Use Compatibility Matrix



Source: City of Vacaville 2018a

Policy NO1-P1.1 requires an acoustical analysis for all proposed projects that would locate noise sensitive land uses where the projected ambient noise level is greater than the respective normally acceptable noise level, as indicated in the Noise Element of the General Plan and requires mitigation of noise impacts that exceed land use compatibility standards. The acoustical analysis would be performed by a qualified person experienced in the fields of noise assessment and architectural acoustics.

Figures NOI-2 and NOI-3 of the Noise Element of the General Plan show the CNEL Airport Noise contours from Nut Tree Airport. The project site lies outside the 55-60 CNEL contour for Nut Tree Airport. In addition, no portion of the City lies within the 60 dBA CNEL noise contour of the Travis Air Force Base.

Policy NOI-P4.1 precludes the generation of annoying or harmful noise through conditions of approval on stationary noise sources such as construction and property maintenance activity and mechanical equipment.

Policy NOI-P4.2 requires the following construction noise control measures:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary, noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize quiet air compressors and other stationary noise sources where technology exists.
- Limit hours of operation of outdoor noise sources through conditions of approval.

City of Vacaville Performance Standards Chapter 14.09.127.090 Hours of Construction

A. No construction or grading equipment shall be operated, nor any outdoor construction or repair work shall be permitted within 500 feet from any occupied residence between dusk (one-half hour after sunset) and 7 AM Monday through Saturday, and no such grading or construction activities shall be allowed on Sundays or holidays except as provided for herein:

    1. Interior work which would not create noise or disturbance noticeable to a reasonable person of normal sensitivity in the surrounding neighborhood shall not be subject to these restrictions;

    2. Construction or repair work performed by or under the direction of a homeowner at his or her residence is exempt from these restrictions on Sundays and holidays, but such construction or repair work shall be limited to the hours between 8 AM and dusk.

B. A request for an exception to the permitted construction hours and days may be granted by the Director for emergency work, to offset project delays due to inclement weather, for 24-hour construction projects, or other similar occurrences.

C. City projects undertaken by or on behalf of the City's Public Works Department shall be exempt from these provisions.

City of Vacaville Municipal Code Chapter 14.09.127 "Supplemental Standards, Performance Standards." Paragraph 14.09.127.120 "Noise"

This section of the Vacaville Municipal Code implements the Noise Element of the General Plan. It is applicable to the land use determinations approved through the General Plan amendment and the zone change processes. This section also applies to any project approvals granted in accordance with the Zoning Ordinance and the Subdivisions Ordinance. The standards identify the maximum noise levels to which sensitive land uses may be exposed and the maximum noise standards related to non-transportation sources. A sensitive land use is a use which is sensitive to noise impacts and for which this section establishes maximum noise exposure standards.

In addition to repeating the exterior noise standards stated in the General Plan Noise Element, the Municipal Code also sets limits for interior noise levels from transportation and non-transportation sources. Table 14.09.127.03 addresses transportation sources and states the following:

Table 14.09.127.03
Noise Standards for Transportation Sources

Unmitigated Day/Night Average Noise Level (DNL) in Decibels (dB)

Land Use Category	Noise Standard (DNL)	
	Interior	Exterior
Residential	45	60
Transient Lodging: Motels, Hotels	45	–
Hospitals, Nursing Homes	45	60
Other uses	–	–

Table 14.09.127.04 addresses maximum noise exposure and generation levels for non-transportation sources, defined as elements such as industrial operations, outdoor recreational facilities, loading docks, and construction equipment, as follows:

Table 14.09.127.04
Maximum Noise Exposure and Generation Levels for Non-Transportation Sources

		Exterior Noise Levels		Interior Noise Levels	
Land Use Category	Noise Level Descriptor	Daytime (7am to 10pm)	Nighttime (10pm to 7am)	Daytime (7am to 10pm)	Nighttime (10pm to 7am)
Residential	Hourly L_{eq}, dBA	50	45	45	35
Maximum Level, dBA	70	65	–	–	
Transient Lodging	Hourly L_{eq}, dBA	–	–	45	35
Hospitals, Nursing Homes	Hourly L_{eq}, dBA	50	45	45	35
Other	Hourly L_{eq}, dBA	–	–	–	–
	Maximum Level, dBA	–	–	–	–
Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.					

The Vacaville Municipal Code also states that the noise standards for non-transportation sources shall not apply in the following situations:

A. To new uses if the ambient noise levels exceed the hourly L_{eq} or the maximum level of the proposed noise generator unless the additional noise generated would increase the projected combined noise levels by a minimum of 3 dB;

B. To public parks or public playgrounds upon a finding by the decision-maker that the location of the facilities within the park or playground reasonable limits the noise impacts upon other land uses.

C. For nuisance abatement related to residential generated noise sources, including but not limited to children playing, lawn mowers, barking dogs, and musical equipment.

D. To residential caretaker units established in conjunction with nonresidential units.

E. To construction activity related to public improvement projects where the Director has determined that full compliance with these standards cannot be practically achieved.

Paragraph 14.09.127.090 "Hours of Construction" states the following:

A. No construction or grading equipment shall be operated, nor shall any outdoor construction or repair work be permitted within 500 feet from any occupied residence between dusk (one-half hour after sunset) and 7 AM Monday through Saturday, and no such grading or construction activities shall be allowed on Sundays or holidays except as provided for herein:

1. Interior work that would not create noise or disturbance noticeable to a reasonable person of normal sensitivity in the surrounding neighborhood shall not be subject to these restrictions.

2. Construction or repair work performed by or under the direction of a homeowner at his or her residence is exempt from these restrictions on Sundays and holidays, but such construction or repair work shall be limited to the hours between 8 AM and dusk.

B. A request for an exemption to the permitted construction hours and days may be granted by the Director for emergency work, to offset project delays due to inclement weather, for 24-hour construction projects, or other similar occurrences.

C. City projects undertaken by or on behalf of the City's Public Works Department shall be exempt from these provisions.

Paragraph 14.09.127.160.A "Vibration, Heat, and Electrical Disturbance" states the following:

A. Vibration. No vibration shall be allowed to occur or be apparent to a reasonable person of normal sensitivity offsite or to an adjacent use on the same site except that the ground vibration caused by moving vehicles or temporary construction activities is exempted from this provision.

Identification of Sensitive Receptors and Existing Ambient Noise Levels

Sensitive Receptors

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are considered to be more sensitive to noise intrusion than commercial or industrial activities. Ambient noise levels can also affect the perceived desirability or livability of a development.

The project site is located in northeast Vacaville near the intersection of New Horizons Way and East Akerly Drive. The project site is within the Vaca Valley Business Park Policy Plan area, which is bordered by I-505 to the west, I-80 to the south and east, and Vaca Valley Parkway to the north. The Nut Tree Airport is approximately 1.25 miles southwest of the project site.

The project site is surrounded by undeveloped land to the north and south, the Genentech Vacaville Campus to the west, and the Kaiser Permanente Medical Center to the east. The closest sensitive receptor to the project site is the

Kaiser Permanente Medical Center, located 410 feet east of the project site. The closest residential use to the project site is the single-family residences at the corner of Crescent Drive and Quinn Road (130 Pioneer Road), located approximately 0.4-mile northeast of the project site.

Ambient Noise Levels

The existing noise environment in a project area is characterized by the area's general level of development, due to the high correlation between the level of development and ambient noise levels. Areas that are not urbanized are relatively quiet, while areas that are more urbanized are noisier as a result of roadway traffic, industrial activities, and other human activities.

The City and the project site are exposed to noise generated by traffic on I-80 and I-505. To a lesser extent, noise is also generated along major arterial roads such as Vaca Valley Parkway. Traffic noise depends primarily on traffic speed (tire noise increases with speed) and the proportion of truck traffic (trucks generate engine, exhaust, and wind noise in addition to tire noise). Changes in traffic volumes can also have an impact on overall traffic noise levels. For example, it takes 25 percent more traffic volume to produce an increase of only 1 dBA in the ambient noise level. For roads already heavy with traffic volume, an increase in traffic numbers could even reduce noise because the heavier volumes could slow down the average speed of the vehicles. A doubling of traffic volume results in a 3 dBA increase in noise levels.

Existing roadway contours are shown in Figure NOI-1 in the Vacaville General Plan Noise Element and are provided in Figure 10 with respect to the project site. According to the contours, noise levels at most of the project site should be below 60 dBA L_{dn}. Only the edge of the southeast corner of the project site borders the 60-65 dBA L_{dn} contour.

3.13.2 Methodology

In accordance with the requirements of CEQA, the noise analysis evaluates the project's noise sources to determine the impact of the proposed project on the existing ambient noise environment. The City noise contours were used to provide baseline noise conditions at nearby sensitive receptors and within the project site vicinity. For the purpose of this analysis, potentially sensitive receptors were determined by reviewing current aerial photography.

Construction Noise and Vibration

The Federal Highway Administration Roadway Construction Noise Model (RCNM) was used to determine noise generated from construction activities. The RCNM is used as the Federal Highway Administration's national standard for predicting noise generated from construction activities. The RCNM analysis includes the calculation of noise levels (L_{max} and L_{eq}) at incremental distances for a variety of construction equipment. The spreadsheet inputs include acoustical use factors, L_{max} values, and L_{eq} values at various distances, depending on the ambient noise measurement location. Construction noise levels were calculated for each phase of construction based on the equipment list provided by the applicant.

Vibration from construction equipment is analyzed at the surrounding buildings and compared to the applicable California Department of Transportation building damage criteria to determine whether construction activities would generate vibration at levels that could result in building damage.

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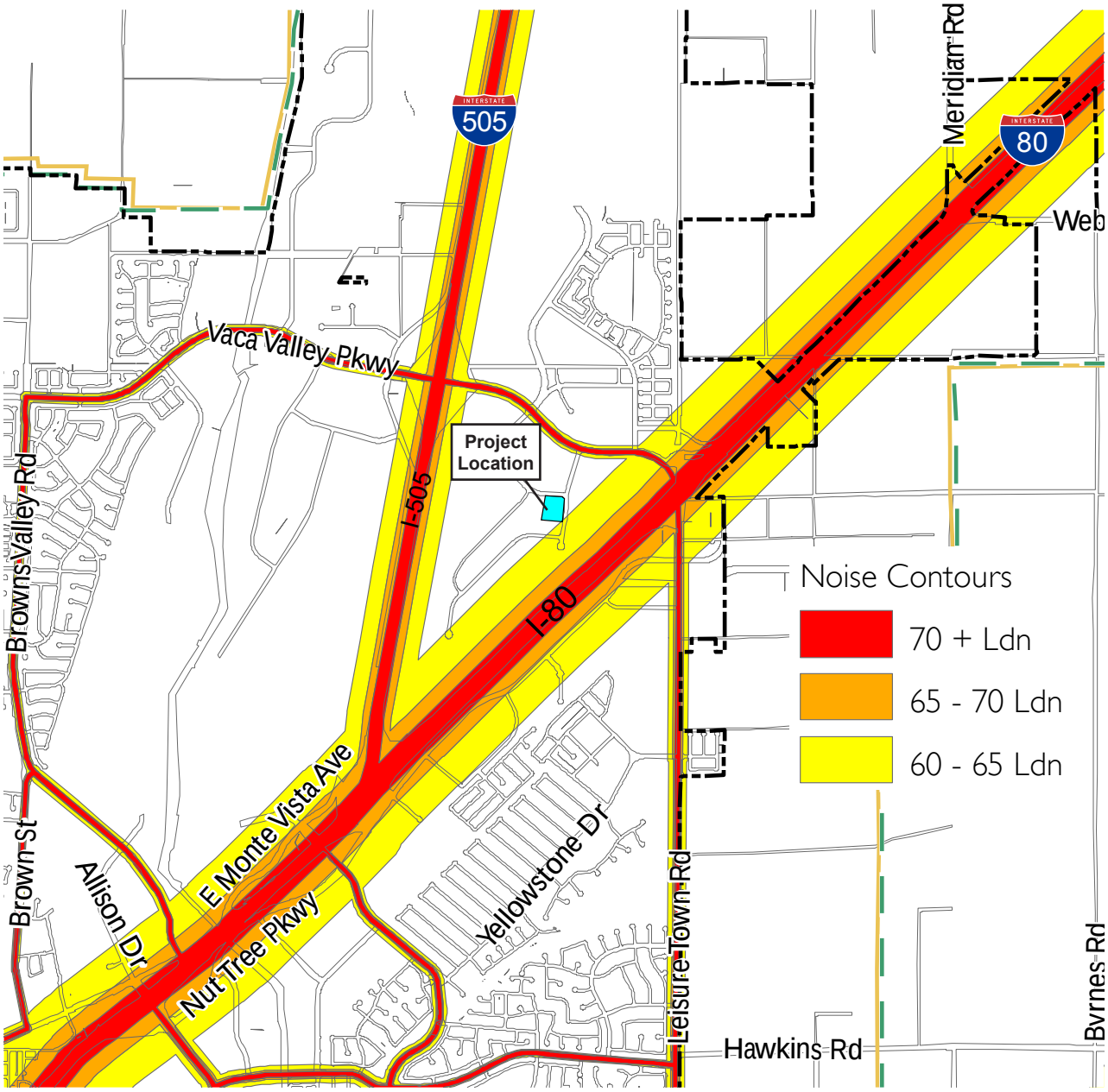



Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

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Stantec

Project Location
Vacaville, California

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
10

Title
Existing Noise Level Contours

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Operational Noise and Vibration

Impacts from future project-related traffic were estimated using predicted traffic counts for the project prepared by Stantec.

Noise from the proposed project's mechanical and heating, ventilation, and air conditioning systems would operate regularly and are therefore required to comply with the maximum noise limits listed in Table 14.09.127.04 of the City's Municipal Code (refer to regulatory discussion above).

The proposed project would not include sources of vibration during operations. Therefore, no operational vibration assessment is required.

EPA Guidelines

The EPA has established guidelines (Environmental Protection Agency Region 10 Environmental Impact Statement Guidelines, April 1973) for assessing the impact of an increase in noise levels. These guidelines have been used as an industry standard to determine the potential impact of noise increases on communities. Most people can tolerate a small increase in background noise (up to about 5 dBA) without complaint, especially if the increase is gradual over a period of years (such as from gradually increasing traffic volumes). Increases greater than 5 dBA may cause complaints and interference with sleep. Increases above 10 dBA (heard as a doubling of judged loudness) are likely to cause complaints and should be considered a serious increase. Table 3.13-7 defines each of the traditional impact descriptions, their quantitative range, and the qualitative human response to changes in noise levels.

Table 3.13-7: EPA Impact Guidelines

Increase over Existing or Baseline Sound Levels	Impact Per EPA Region Guidelines	Qualitative Human Perception of Difference in Sound Levels
0 dB to 5 dB	Minimum Impact	Imperceivable or Slight Difference
6 dB to 10 dB	Significant Impact	Significant Noticeable Difference – Complaints Possible
Over 10 dB	Serious Impact	Loudness Changes by a Factor of Two or Greater. Clearly Audible Difference – Complaints Likely

Note:
dB = decibel

3.13.3 Environmental Impact Analysis

This section discusses potential impacts related to noise associated with the proposed project and provides mitigation measures where necessary.

Impact NOI-1 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?

Impact Analysis

Exterior Traffic Noise Level Impacts

To describe future noise levels due to project-generated traffic, weekday AM and PM peak hour traffic numbers expected to be added by the project were generated by Stantec. This study indicates that the project would only add a maximum of 36 vehicle trips during the AM Peak Hour and a maximum of 39 vehicle trips during the PM Peak Hour. The addition of only 39 vehicle trips per hour is not a volume of traffic sufficient to increase traffic noise, even if the existing ambient noise environment around the hotel was quiet. Therefore, the project would not cause increased traffic noise levels over the baseline conditions at the neighboring sensitive receptors, and this impact would be less than significant in this regard.

Interior Traffic Noise Level Impacts – Guest Rooms

The California Building Code states that the interior noise levels attributable to exterior sources shall not exceed 45 dBA in any habitable room, including hotel guest rooms. The needed sound isolation requirements of a building's exterior façade system would be dependent on the following conditions:

- The dimension of the rooms with exterior windows;
- The finishes within the rooms;
- The ratio of clear glass to solid wall in the exterior wall assembly; and
- The exterior solid wall construction.

Modern construction with punch windows typically provides a 25-dBA exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise levels of 70 dBA L_{dn} or less would typically comply with the required interior noise level standard as stated in the California Building Code. Modern construction using window walls, curtainwalls, or a high ratio of exterior clear glass would provide less reduction with the windows closed. Buildings using a large amount of glass are required to comply with the required interior noise level standard as stated in the California Building Code if exposure to exterior noise levels of 67 dBA L_{dn} or less is anticipated.

Based on Figure NOI-1 in the City's General Plan Noise Element, noise levels at the project site are expected to be a maximum of 65 dBA L_{dn}. With a maximum exterior noise level of 65 dBA L_{dn}, interior noise levels within the hotel guest rooms would comply with California Building Code requirements for standard exterior façade construction, and this impact would be less than significant.

Interior Traffic Noise Level Impacts – Occupied Non-Guest Room Spaces

CalGreen states that, if an occupied non-guest room space is exposed to a noise level of 65 dBA L_{eq} 1-hr during any hour of operation, the exterior façade design is required to incorporate features to reduce noise inside the spaces to a maximum of 50 dBA L_{eq} 1-hr. Given that the project site would be exposed to noise levels up to 65 dBA L_{dn}, a 1-hour noise level of 65 dBA or greater is possible, and the project would be required to comply with the CalGreen requirements.

Assuming a worst-case condition of a common space, such as a reception lobby or dining area with a hard-surfaced floor, gypsum board ceiling, and a full-glass exterior wall, windows with a minimum OITC rating of OITC 19 would be

required to help achieve the code-dictated maximum 50 dBA L_{eq} 1-hr noise level. A typical 1-inch-thick insulating glass unit constructed of 0.25-inch glass – inch airspace – ¼inch glass has an expected rating of OITC 26. Therefore, standard construction would be acceptable for the occupied non-guest room spaces to achieve CalGreen requirements, and traffic noise levels would be less than significant.

Proposed Project Fixed-Source Noise

Typical hotel building construction would commonly involve new rooftop mechanical equipment such as air-handling units, condensing units, make-up air units, and exhaust fans. This equipment would generate noise that would radiate to neighboring properties. The noise from this equipment would be required to comply with the maximum noise level limits listed in Table 14.09.127.04 of the Vacaville Municipal Code. The proposed project would comply with the requirements of the Vacaville Municipal Code with implementation of Mitigation Measure NOI-1 by incorporating design measures for the mechanical equipment, such as shielding and/or appropriate attenuators, to reduce noise levels that may affect nearby properties. In addition, nighttime noise limits would be applicable to any equipment required to operate between the hours of 10:00 PM and 7:00 AM. With the implementation of Mitigation Measure NOI-1, the impact of fixed-source noise to the neighboring properties would be less than significant.

Short-term Construction Noise Impacts

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the project site. This increased traffic would be comprised of vehicles, medium trucks, and heavy trucks.

Construction vehicle traffic would not travel nearby any noise sensitive receptors, from I-80, to Vaca Valley Parkway, to the project site at the corner of New Horizons Way and East Ackerly Drive. Therefore, the impact of construction traffic noise to the neighboring noise-sensitive receptors would be less than significant.

The second type of short-term noise impact is related to noise generated during construction. Construction activities would include site preparation, grading, building, construction, paving, and architectural coating.

Each construction stage has its own mix of equipment and, consequently, its own noise characteristics. These various construction operations would change the character of the noise generated at the project site, and therefore, the exterior noise level as construction progresses. The loudest phases of construction include site preparation, building construction, and grading phases, as the noisiest construction equipment is earthmoving and grading equipment. Table 3.13-8 lists types of construction equipment that may be used throughout construction and the maximum and average operational noise level as measured at 410 feet from the operating equipment. The 410-foot distance represents the approximate distance between the project site and the closest noise-sensitive receptor at the Kaiser Permanente Medical Center.

Table 3.13-8: Summary of Federal Highway Administration Roadway Construction Noise Model

Construction Equipment Source	Distance to Nearest Sensitive Receptor	Estimated Sound Level at Receptor		
		L_{max}	Acoustical Use Factor (%)	L_{eq}
Backhoe	410 feet	59.3	40	55.3
Roller	410 feet	61.7	20	54.7
Crane	410 feet	62.3	16	54.3
Concrete Mixer Truck	410 feet	60.5	40	56.5
Compressor (air)	410 feet	59.4	40	55.4
Bulldozer	410 feet	63.4	40	59.4
Front End Loader	410 feet	60.8	40	56.9
Generator	410 feet	62.4	50	59.3
Grader	410 feet	66.7	40	62.7
Scraper	410 feet	65.3	40	61.3
Paver	410 feet	58.9	50	55.9
Welder / Torch	410 feet	55.7	40	51.7
Tractor (Forklift)	410 feet	65.7	40	61.7

Notes:
L_{eq} = equivalent sound level
L_{max} = maximum sound level
Source: Stantec 2019c, Federal Highway Administration RCNM, v1.1, 2008

The construction of the entire project would be conducted in five sequential stages, and each stage would use different pieces of construction equipment. The main noise-producing equipment for each construction stage is shown in Table 3.13-9.

Table 3.13-9: Construction Stage Equipment

Construction Stage	Planned Equipment
Site Preparation	Grader Scraper Tractor/Loader/Backhoe
Grading	Grader Rubber-Tired Dozer Tractor/Loader/Backhoes (2)

Construction Stage	Planned Equipment
Building Construction	Crane Forklifts (2) Generator Tractor/Loader/Backhoe Welders (3)
Paving	Cement and Mortar Mixer Paver Rollers (2) Tractor/Loader/Backhoe
Architectural Coating	Air Compressor

A worst-case condition for construction activity would assume that all noise-generating equipment was operating at the same time and at the same distance away from the closest noise-sensitive receptor. Using this assumption, the RCNM program calculated the following combined L_{eq} and L_{max} noise levels from each phase and stage of construction as shown in Table 3.13-10.

Table 3.13-10: Calculated Noise Level from Each Construction Stage

Construction Stage	Distance to Closest Noise Sensitive Receptor	Calculated L_{eq}	Calculated L_{max}
Site Preparation	410 feet	66.8 dBA	70.7 dBA
Grading	410 feet	67.6 dBA	71.6 dBA
Building Construction	410 feet	66.1 dBA	70.3 dBA
Paving	410 feet	64.7 dBA	69.4 dBA
Architectural Coating	410 feet	55.4 dBA	59.4 dBA

Notes:
dBA = A-weighted decibel
L_{eq} = equivalent sound level
L_{max} = maximum sound level

Although noise levels could range into the conditionally acceptable to normally unacceptable ranges, as defined by Table 3.13-6, increases in noise levels from construction activities would be temporary. In addition to the hours restrictions on construction noise contained within the General Plan and the Vacaville Municipal Code, the Federal Transit Administration (FTA) offers construction mitigation measures, listed in Section 12.1.3 “Mitigation of Construction Noise,” in the Transit Noise and Vibration Impact Assessment document (FTA-VA-90-1003-06 September 2018). Some of the applicable measures below are included in Mitigation Measure NOI-2.

“Design Considerations and Project Layout:

- Construct noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers.
- Re-route truck traffic away from residential streets, if possible. Select streets with the fewest homes, if no alternatives are available.



- Site equipment on the construction lot as far away from noise-sensitive sites as possible.
- Construct walled enclosures around especially noisy activities or clusters of noisy equipment. For example, shields can be used around pavement breakers, and loaded vinyl curtains can be draped under elevated structures.

Sequence of Operations:

- Combine noisy operations to occur in the same time period. The total noise level produced would not be significantly greater than the level produced if the operations were performed separately.
- Avoid nighttime activities. Sensitivity to noise increases during the nighttime hours in residential neighborhoods.

Alternative Construction Methods:

- Avoid impact pile driving where possible in noise-sensitive areas. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use.
- Use specially quieted equipment, such as quieted and enclosed air compressors and mufflers, on all engines.
- Select quieter demolition methods, where possible. For example, sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers."

In conclusion, construction noise would be short-term and intermittent. Furthermore, implementation of Mitigation Measure NOI-2 would follow the recommendations within the City's General Plan and codes; therefore, impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM NOI-1: **Project Fixed-Source Noise.** The noise from all mechanical equipment associated with the project shall comply with the maximum noise level limits listed in Table 14.09.127.04 of the Vacaville Municipal Code.

MM NOI-2: **Construction Activity.** Implementation of the following multipart mitigation plan is required to reduce the potential construction period noise impacts.

- Use a comprehensive program of noise prevention through planning and mitigation and consider noise impacts as a crucial factor in project approval.
- Construct noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers.
- Site equipment on the construction lot as far away from noise-sensitive sites as possible.
- Construct walled enclosures around especially noisy activities or clusters of noisy equipment. For example, shields can be used around pavement breakers, and loaded vinyl curtains can be draped under elevated structures.



- Combine noisy operations to occur in the same time period. The total noise level produced will not be significantly greater than the level produced if the operations were performed separately.
- Avoid nighttime activities. Sensitivity to noise increases during the nighttime hours in residential neighborhoods.
- Avoid impact pile driving where possible in noise-sensitive areas. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use.
- Use specially quieted equipment, such as quieted and enclosed air compressors and mufflers, on all engines.
- Select quieter demolition methods where possible. For example, sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers.
- Post a construction site notice that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the Site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public and approved by the City.

Level of Significance After Mitigation

Less Than Significant with Mitigation.

Impact NOI-2 Generation of excessive groundborne vibration or groundborne noise levels?

Impact Analysis

During construction of the proposed project, equipment such as rollers, bulldozers, and trucks may be used as close as 410 feet from the nearest sensitive receptors at the Kaiser Permanente Medical Center. Construction equipment that would be used during project construction would generate vibration levels between 0.00005 PPV and 0.003 PPV at a distance of 410 feet, as shown in Table 3.13-11. All the groundbourne vibration levels are below the FTA vibration threshold at which human annoyance could occur of 0.10 PPV. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. As such, implementation of the proposed project would have a less than significant impact related to vibration.

Table 3.13-11: Vibration Source Levels for Construction Equipment

Type of Equipment	Peak Particle Velocity at 25 Feet	Peak Particle Velocity at 50 Feet	Peak Particle Velocity at 410 Feet	Threshold at which Human Annoyance Could Occur	Potential for Proposed Project to Exceed Threshold
Vibratory roller	0.210	0.074	0.003	0.10	None
Large bulldozer	0.089	0.031	0.001	0.10	None

Type of Equipment	Peak Particle Velocity at 25 Feet	Peak Particle Velocity at 50 Feet	Peak Particle Velocity at 410 Feet	Threshold at which Human Annoyance Could Occur	Potential for Proposed Project to Exceed Threshold
Loaded trucks	0.076	0.027	0.001	0.10	None
Jackhammer	0.035	0.012	0.0005	0.10	None
Small bulldozer	0.003	0.001	0.00005	0.10	None

Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual, September 2018

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact NOI-3 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?

Impact Analysis

Figures NOI-2 and NOI-3 in the General Plan Noise Element show the CNEL airport noise contours from the Nut Tree Airport. The project site lies outside the 55-60 CNEL contour for the Nut Tree Airport. No portion of the City lies within the 60 dBA CNEL noise contour of the Travis Air Force Base. A private helipad, the Kaiser Permanente Medical Center helipad, is located approximately 446 feet northeast of the project site, as measured from available maps. Activity at the Kaiser Permanente Medical Center helipad is intermittent, with only an average of two landings for a typical day and six landings for a busy day. Each helipad event is also typically a short-term event, with the duration of the arrival lasting approximately 45 seconds before the engine is turned off. Once the helicopter is ready to leave, the departure time is about 15 seconds. Given the frequency of helipad events, the duration of each event, and the distance between the helipad and the project site, the proposed project would not expose persons staying or working in the project vicinity to excessive aviation noise, and the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.14 POPULATION AND HOUSING

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

3.14.1 Environmental Setting

Over the past several decades, the City has grown from a small, rural town to a moderate-sized city, with its industry, ease of access, and proximity to the Bay Area. According to the U.S. Census, the City had a population of 92,428 in 2010 (California Department of Finance 2019a). Since 2010, the City's population has increased by 7 percent to 98,807 people (California Department of Finance 2019b). The City projected that its population would grow to a total of 112,000 by 2035, with 42,700 dwelling units. In addition, the City projected approximately 9.6 million square feet of commercial space, 3.1 million square feet of office space, and 13.1 square feet of industrial space by 2035, based on past development trends (City of Vacaville 2013). The project site is located within the City's Vaca Valley Business Park Policy Plan area. The proposed project involves the development of a four-story hotel on approximately 2.26 acres and does not include a residential component.

3.14.2 Methodology

The following evaluation of potential population, housing, and employment impacts associated with the proposed project was based on data obtained from the U.S. Census, the California Department of Finance, and applicable planning documents from the City. The following impact discussions consider the impacts of the proposed project related to employment, population, and housing in the City.

3.14.3 Environmental Impact Analysis

This section discusses potential impacts related to population and housing associated with the proposed project and provides mitigation measures where necessary.

Impact POP-1 Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact Analysis

The project site is designated Business Park by the General Plan and is located within the Vaca Valley Business Park Policy Plan area. The City uses policy plans such as the Vaca Valley Business Park Policy Plan to strategically plan for new growth within such areas. The Vaca Valley Business Park Policy Plan coordinates development for highway commercial, light industrial, office and research facilities, hotels, recreational facilities, etc.

The proposed project involves development of a four-story hotel building with up to 107 guest rooms, with associated parking, access roads, driveways, landscaping, and utilities. Project utilities (water, sewer, wastewater) would connect to City infrastructure in the immediate vicinity of the project site. The proposed project does not involve any residential development. The proposed project would require up to 15 workers during the peak construction phase. Construction activities are anticipated to occur over approximately 12 months. Construction of the proposed project would not affect the population of the City, because the construction workforce is available from nearby areas. In addition, the project site is within commuting distance of the greater San Francisco Bay Area, so construction workers are not expected to relocate. Temporary construction activities are not expected to increase the demand for housing.

Operation of the proposed project would create new jobs and increase the demand for new employees. When construction is complete, operation of the proposed project would require up to five full-time employees. The unemployment rate in Solano County was 4.2 percent in July 2019 (EDD 2019); therefore, the proposed project's construction- and operation-related employment is expected to be absorbed by the regional labor force and would not attract new workers to the City. Based on an average of two guests per hotel room, the proposed project would generate up to 214 guests at maximum capacity; however, this use would not result in the provision of permanent housing, because the hotel would only provide short-term stay for hotel guests. The proposed project would be consistent with the intent of the Vaca Valley Business Park Policy Plan, which was accounted for in the City's General Plan. Therefore, this impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact POP-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact Analysis
The project site is undeveloped and does not contain residential development. Construction of the proposed project would not result in the displacement of housing, so the construction of replacement housing elsewhere would not be necessary. The proposed project would have no impact related to replacement housing.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.



3.15 PUBLIC SERVICES

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
	Fire protection?	☐	☐	☒	☐
	Police protection?	☐	☐	☒	☐
	Schools?	☐	☐	☒	☐
	Parks?	☐	☐	☒	☐
	Other public facilities?	☐	☐	☒	☐

3.15.1 Environmental Setting

Fire Protection

The Vacaville Fire Department (VFD) provides fire and emergency medical services to 28 square miles of the City, as well as emergency medical services to 160 square miles of unincorporated county land surrounding the City. The VFD responds to calls for fires, hazardous materials emergencies, certain technical emergencies, vehicle accidents and extrication incidents, and first responder and transport services (City of Vacaville 2015a). The VFD also responds to mass-casualty incidents within its larger response area as part of a countywide mutual aid system for ambulances. The VFD response time goal is to be on scene within 7 minutes or less starting from receipt of a 911 call 90 percent of the time (City of Vacaville 2013). According to the VFD 2018 annual report, the VFD maintained the following response times: 5 minutes and 29 seconds for fire, EMS, hazmat, and other emergencies; 5 minutes and 25 seconds for emergency medical services (critical); and 7 minutes and 8 seconds for first arriving engine at a fire (VFD 2018). VFD Station 73, located at 650 Eubanks Court approximately 1 mile west of the project site, is the nearest fire station to the project site.

Police Protection

The Vacaville Police Department (VPD) provides law enforcement services to the City. The VPD employs 173 full-time employees, uses many civilian volunteers, and maintains Reserve Officer and Cadet Programs (City of Vacaville 2019g). Responsibilities of the VPD include a 24/7 communication center, crime suppression and prevention, investigations, traffic patrol, and emergency services. For Priority I calls, the adopted average response time standard is 6 minutes and 1 second. For Priority II calls, the adopted average response time standard is 16 minutes and 28 seconds. The VPD is meeting or exceeding its adopted standards for response times (City of Vacaville 2013). There is one main VPD police station located at 660 Merchant Street, which is approximately 5 miles southwest of the project site.

Schools

The following four school districts serve students in the City: Vacaville Unified School District, Travis Unified School District, Dixon Unified School District, and Fairfield-Suisun Unified School District. The project site is located within the Vacaville Unified School District (City of Vacaville 2015a). The nearest school is Vacaville Unified School District's Browns Valley Elementary School, located approximately 3 miles southwest of the project site. In addition, Solano Community College, Vacaville Center, is located approximately 0.5 mile north of the project site.

Parks

The City owns and operates three categories of parks: neighborhood, community, and regional. The City also owns and operates accessible open space, special purpose facilities and trails (City of Vacaville 2015a). The nearest park, Corderos Park, is a neighborhood park located approximately 1 mile north of the project site.

Other Facilities

The Solano County Library operates and maintains two libraries in the City in cooperation with the Vacaville Unified School District. Vacaville Public Library – Cultural Center is approximately 4.2 miles southwest of the project site. Vacaville Public Library – Town Square, is located approximately 4.7 miles southwest of the project site.

3.15.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the Public Facilities and Services Element of the General Plan, Parks and Recreation Element of the General Plan, the General Plan EIR, the Vacaville Municipal Code, and Section 2.0, Project Description, of this ISMND.

3.15.3 Environmental Impact Analysis

This section discusses potential impacts on public services associated with the proposed project and provides mitigation measures where necessary.

Impact PUB-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

- **Fire protection?**
- **Police protection?**
- **Schools?**
- **Parks?**
- **Other public facilities?**

Impact Analysis

Fire Protection

The proposed project does not involve a residential component. However, the proposed project would require up to 15 workers during the peak construction phase. When construction is complete, operation of the proposed project would require up to five full-time employees. In addition, based on an average of two guests per hotel room, the proposed project would generate up to 214 guests at maximum capacity. Overall, implementation of the project would

result in an increased demand for fire protection services at the project site. As described in Section 3.14, Population and Housing, the proposed project would not affect the population of the City, because the proposed project's construction- and operation-related employment is expected to be absorbed by the regional labor force and would not attract new workers to the City.

The proposed project would comply with the California Fire Code and include site-specific design features such as installing a new 8-inch water line for fire suppression, ensuring adequate emergency access to the project site, and requiring structures to be built with approved building materials. Conformance with the California Fire Code would reduce risks associated with fire hazards. The two 26-foot-wide driveways at the north and south ends of the project site on East Akerly Drive would provide access in case of an emergency. During construction, equipment and materials would be stored onsite or on the undeveloped area north of the project site adjacent to New Horizons Way. Construction activities are anticipated to be confined to the project site, and no road closures or detours are anticipated; therefore, emergency service and access to the surrounding area would be maintained.

Pursuant Section 11.01.020 of the City's Municipal Code, new development is required to pay the City's Public Facilities Impact Fees. The purpose of this fee is to provide for police, fire, and general City facilities and equipment to serve the needs of, and address the impacts from, new residential, industrial, commercial office, and other development (City of Vacaville 2015a). Payment of the Public Facilities Impact Fees would offset the cost of fire protection and paramedic service demands associated with the proposed project. In addition, the proposed project would be consistent with the intent of the Vaca Valley Business Park Policy Plan, which was accounted for in the City's General Plan. Therefore, the impact to fire protection services would be less than significant.

Police Protection

Law enforcement services for the project site are provided by the VPD. The proposed project does not include a residential use that would induce population growth. However, the proposed project would require up to 15 workers during the peak construction phase. When construction is complete, operation of the proposed project would require up to five full-time employees. In addition, based on an average of two guests per hotel room, the proposed project would generate up to 214 guests at maximum capacity. Overall, implementation of the project would result in an increased demand for police protection services at the project site. The VPD is currently meeting or exceeding its adopted standards for response times, and the proposed project would not affect VPD response time goals. The proposed project would be required to pay the City's Public Facilities Impact Fees in accordance with Section 11.01.020 of the Vacaville Municipal Code. Payment of the Public Facilities Impact Fees would offset the cost of police service demands associated with the proposed project. In addition, the proposed project would be consistent with the intent of the Vaca Valley Business Park Policy Plan, which was accounted for in the City's General Plan. Therefore, the impact to police protection services would be less than significant.

Schools

The proposed project does not include a residential use that would induce population growth or increase student enrollment. Construction of the proposed project would require up to 15 workers during the peak construction phase. The construction workforce would be available from nearby areas and is not expected to permanently relocate to the city with their families, which would lead to an increase in student enrollment. Furthermore, pursuant to Section 11.01.020 of the City's Municipal Code, Government Code Section 65995, and California Education Code Section 17620, new development, including residential, commercial, and industrial projects, are required to pay a School Facilities Mitigation Fee (City of Vacaville 2018a; Vacaville Unified School District 2017). Payment of these fees would offset the costs of school service demands and contribute to the construction or expansion of school facilities. Therefore, impacts to schools would be less than significant.



Parks

The proposed project does not include a residential component that would induce population growth in the project area. Construction of the proposed project would require up to 15 workers during the peak construction phase. The construction workforce could use the nearby parks during construction; however, such use would not be substantial because they would be working in the area temporarily. Furthermore, pursuant to Section 11.01.020 of the City's Municipal Code, the proposed project would be required to pay the City's Parks and Recreation Facilities Impact Fee (City of Vacaville 2018a). Payment of this fee would offset the costs of park and recreation demands and contribute to the City's meeting its recreation standards. Therefore, impacts to parks and recreation would be less than significant.

Other Public Facilities

The proposed project would not include a residential component that would induce population growth in the project area. Construction of the proposed project would require up to 15 workers during the peak construction phase. The construction workforce could use nearby public facilities, including public libraries. However, such use would not be substantial because they would be working in the area temporarily. The proposed project would be required to pay the City's Public Facilities Impact Fees in accordance with Section 11.01.020 of the City's Municipal Code. Payment of these fees would offset the costs of other public facility demands associated with the proposed project. Therefore, impacts to other public facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.16 RECREATION

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 Environmental Setting

The City's Parks and Recreation Department owns and operates 25 neighborhood parks, 8 community parks, and 1 regional park (City of Vacaville 2015a). The City also manages accessible open space areas, eight special purpose facilities, and trails. The project site is within the Vaca Valley Business Park Policy Plan area, which is designated for development of a business park that includes commercial, office, medical, and institutional uses. The nearest park is Corderos Park, which is a neighborhood park that is approximately 7 acres in size located approximately 1 mile north of the project site.

3.16.2 Methodology

The following analysis is based on a review of the Parks and Recreation Element of the General Plan and the Vacaville Municipal Code.

3.16.3 Environmental Impact Analysis

This section discusses potential impacts to recreation associated with the proposed project and provides mitigation measures where necessary.

Impact REC-1 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?

Impact Analysis

The proposed project would involve the development of a four-story hotel with 107 guest rooms and other onsite guest amenity areas such as an indoor swimming pool, fitness room, and dining/community gathering room. The proposed project does not include a residential component that would permanently increase the City's residential population. Construction of the proposed project would require up to 15 workers during the peak construction phase. The construction workforce could use the nearby parks during construction; however, such use would not be substantial because they would be working in the area temporarily. The proposed project would require up to five full-time employees and is expected to temporarily generate up to 214 hotel guests at maximum capacity. It is expected employees would already reside in or near the City and would not substantially increase the use of nearby recreation facilities. The proposed project would also provide onsite guest amenity areas, which would reduce use of existing

parks and recreation facilities. Furthermore, pursuant to Section 11.01.020 of the Vacaville Municipal Code, new development is subject to paying the City's Parks and Recreation Facilities Impact Fee (City of Vacaville 2018a). Payment of this fee would offset the costs of park and recreation demands. Therefore, impacts related to recreation facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact REC-2 Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact Analysis

The proposed project would involve the development of a four-story hotel that would include 107 guest rooms and other onsite guest amenity areas such as an indoor swimming pool, fitness room, and dining/community gathering room. The scope of the proposed project does not include the construction or expansion of recreational facilities. Therefore, the proposed project would not result in an adverse physical effect on the environment related to recreation facilities.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.17 TRANSPORTATION

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Conflict with program, plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d)	Result in inadequate emergency access?	☐	☐	☒	☐

3.17.1 Environmental Setting

Roadway System

Freeways

The City is served by two freeways, I-80 and I-505, which are part of the interstate highway network. I-80 has four travel lanes in each direction and extends southwest through Fairfield and Vallejo and northeast through Davis and Sacramento. I-505 has two travel lanes in each direction and links I-80 with I-5. The project site is within the Vaca Valley Business Park Policy Plan area, which is bordered by I-505 to the west, I-80 to the south and east, and Vaca Valley Parkway to the north (City of Vacaville 2015a).

Arterials

The local street and roadway system within the City is composed of a hierarchy of streets with varying functions. Arterial roads range from two-lane arterials to six-lane arterials that link residential and commercial districts with the freeway network and provide intercity connections. Arterials roads near the project site include Vaca Valley Parkway, a four-lane arterial, and East Monte Vista Avenue, a two-lane arterial. These roadways are located north and northwest of the project site and connect toI-80 and I-505. Solano Transit Authority (STA) considers the section of Vaca Valley Parkway between I-505 and I-80 as a route of regional significance. Solano Transit Authority identifies routes of regional significance within the Comprehensive Transportation Plan, which are roadways that carry significant through traffic, connect two or more jurisdictions, serve major transportation hubs, or cross county lines. This roadway segment is also part of the STA Congestion Management Program (CMP) and is subject to biannual monitoring to ensure compliance with the levels of services (LOS) (City of Vacaville 2015a).

Collectors and Local Streets

Collectors are designed to connect residential neighborhoods with arterials and have two travel lanes. New Horizons Way, East Akerly Drive, Grasslands Drive, and Horse Creek Drive are located immediately adjacent to the project site and are collector roads (City of Vacaville 2015a). Local streets are intended to serve adjacent and nearby residential and commercial neighborhoods or business areas only. There are no local streets within the immediate vicinity of project site.

Bicycle Facilities

According to the General Plan, bicycle facilities near the project site include a Class I bike path on Vaca Valley Parkway. A Class I bike path provides a completely separate right-of-way designated for the exclusive use of bicyclists and pedestrians. In addition, the roadways that are adjacent to the project site contain Class II bike facilities. Class II bike facilities include on-street, striped and signed bike lanes (City of Vacaville 2015a).

Bus System

Vacaville City Coach provides public transit service throughout the City. Additionally, Fairfield and Suisun Transit and the Yolobus, which are administered by the Yolo County Transportation District, provide additional transit service to the City (City of Vacaville 2015a). The closest bus stop, served by City Coach Route 4, is located adjacent to the project site at the Kaiser Permanente Medical Center (City Coach 2019).

Intersection Level of Service

Level of service describes the operating conditions experienced by a person on a transportation system. For motorized vehicles, LOS is a qualitative measure of the effects of speed, travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. LOS is designated as A through F, from best to worst, where LOS A through E generally represent traffic volumes at less than roadway capacity, and LOS F represents conditions where traffic demands exceed capacity.

Based on the City's 2018 traffic count data, all intersections within the immediate vicinity of the project site are operating at LOS A or B, with the exception of Vaca Valley Parkway at New Horizons Way, which operates at LOS C during the PM Peak Hour (City of Vacaville 2018). In addition, Vaca Valley Parkway between I-505 to I-80, a route of regional significance, has an existing volume of 1,384 trips during the PM Peak Hour and is operating at LOS C, as provided in Table 3.17-2.

Table 3.17-1: Intersection Level of Service – Existing Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		LOS	Average Delay (sec)	LOS	Average Delay (sec)
Vaca Valley Parkway at I-505 northbound ramps (95)	Signalized	B	18.3	B	13.8
Vaca Valley Parkway at New Horizons Way (98)	Signalized	B	16.3	C	22.1
Vaca Valley Parkway at East Akerly Drive (93)	Signalized	B	20.0	B	16.0
Leisure Town Road I-80 Westbound Ramps (36)	Signalized	A	6.7	A	7.6

Notes:
I-80 = Interstate 80
I-505 = Interstate 505
LOS = level of service
sec = seconds
Source: City of Vacaville 2018

Table 3.17-2: Roadway Segment Level of Service – Existing Conditions

Roadway Section	Classification	Lanes	LOS	Existing Volume (PM Peak)
Vaca Valley Parkway (I-505 to I-80)	Arterial (Class II)	4	C	1,384

Notes:
I-80 = Interstate 80
I-505 = Interstate 505
LOS = level of service
Source: City of Vacaville 2018

3.17.2 Methodology

For this study, the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, was used to calculate the trips that would be generated by the proposed project. The average trip generation rate for ITE and Category 311, All Suites Hotel, was used to determine the total number of project trips. This category provides weekday peak hour and daily trip rates per guest room. However, the Saturday and Sunday All Suites Hotel daily trip rates are based on one case study each, and ITE cautions against using the data. In lieu of the weekend All Suites Hotel trip rates, ITE's Saturday and Sunday trip rates for Business Hotel (Category 312), a similar hotel category, were used to estimate the weekend rates for the proposed project.

The City has established a citywide goal of LOS C, but currently allows for LOS D through F under specified circumstances. At signalized and all-way stop controlled intersections outside of Priority Development Areas, LOS mid-D shall be the LOS significance threshold, and LOS D shall be the LOS significance threshold for two-way stop control intersections (City of Vacaville 2015a). For intersections and CMP roadway segments in Solano County, an impact would occur if the LOS would degrade below LOS C, except where the LOS is already below LOS C; at which point the project should not decrease the existing LOS. For the proposed project specifically, the Solano County CMP states that a project impact is considered significant if the project generated traffic would cause the roadway segment of Vaca Valley Road between I-505 and I-80 to degrade below LOS E. Accordingly, the analysis considers the proposed project's estimated peak hour trips against the existing roadway volumes and LOS (City of Vacaville 2013).

3.17.3 Environmental Impact Analysis

Impact TRANS-1 Conflict with program, plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?

Impact Analysis

The proposed project would generate traffic through the transport of workers, equipment, and materials to and from the project site. It is currently anticipated that project construction would take approximately 12 months to complete, starting in August 2020 and ending in August 2021. The proposed project would require up to 15 workers during the peak construction phase. Construction equipment and materials would be stored onsite, or on the undeveloped area north of the project site adjacent to New Horizons Way. Construction activities are anticipated to be confined to the project site, and no road closures or detours are anticipated. Project construction and grading activities would be consistent with the Vacaville Municipal Code and not occur between dusk (one-half hour after sunset) and 7:00 AM, Monday through Saturday. No grading or construction activities would occur on Sundays or holidays. Since

construction traffic would be temporary and would be spread across the duration of construction, the proposed project would not cause streets in the project area to exceed LOS thresholds.

As shown in Table 3.17-1, all intersections within close proximity to the project site are operating at LOS A or B, with the exception of Vaca Valley Parkway at New Horizons Way, which operates at LOS C during the PM Peak Hour. In addition, Vaca Valley Parkway between I-505 to I-80, a route of regional significance, has an existing volume of 1,384 trips during the Peak Hour and is operating at LOS C (Table 3.17-2). All of these noted intersections and roadway segments are operating well above the standard of significance as required by the City and the CMP.

The proposed project weekday and weekend trip generation is summarized in Table 3.17-3. Accordingly, during weekdays (Monday through Friday), the proposed project would generate 36 AM Peak Hour trips, 39 PM Peak Hour trips, and 477 average daily trips. During the weekend, the proposed project would generate 687 daily trips on Saturday and 525 daily trips on Sunday.

According to the General Plan EIR, and as summarized in Table 3.17-4, the generalized Peak Hour two-way traffic volumes would be 2,420 for a Class II, four-lane arterial roadway segment to be operating at LOS C. As described, the proposed project would result in 36 AM Peak Hour trips and 39 PM Peak Hour trips on weekdays, which would be approximately 1.4 and 1.6 percent of the roadway segment volumes, respectively. The proposed project would result in a minimal increase in traffic on the local roadway network. In addition, the surrounding land uses operate in a more traditional AM and PM peak hour capacities. In contrast to the adjacent uses, the proposed project would have a higher peak trip generation on the weekends and off-peak hour. As such, the proposed project would not result in a significant impact to localized traffic operations, exceeding the City of Vacaville's threshold of LOS D.

Table 3.17-3: Project Trip Generation

Land Use	Project Component	AM Peak Hour			PM Peak Hour			ADT
		Total	In	Out	Total	In	Out	
Weekday								
Rate (ITE 311)	Per Hotel Room	0.34	0.18	0.16	0.36	0.17	0.19	4.46
Trips	107 Rooms	36	19	17	39	18	21	447
Saturday								
Rate[1]	Per Hotel Room	-	-	-	-	-	-	6.42[2]
Trips	107 Rooms	-	-	-	-	-	-	687
Sunday								
Rate[1]	Per Hotel Room	-	-	-	-	-	-	4.91[3]
Trips	107 Rooms	-	-	-	-	-	-	525

Notes:

ADT = average daily trips

ITE = Institute of Transportation Engineers

[1] Weekend ADT rate determined from Business Hotel (Category 312) weekend ADT/weekday ADT rate

[2] Saturday rate = All Suites Hotel weekday rate x (Business Hotel Saturday rate/Business Hotel weekday rate) = 4.46 x (5.79/4.02) = 6.42 trips/room

[3] Sunday rate = All Suites Hotel weekday rate x (Business Hotel Sunday rate/Business Hotel weekday rate) = 4.46 x (4.43/4.02) = 4.91 trips/room

Source: Stantec 2019d

Table 3.17-4: Project Trip Contribution

Roadway Section	Classification	Generalized Peak Hour Volume	LOS	Project AM Peak Hour Trips	Project AM Peak Hour Percent	Project PM Peak Hour Trips	Project PM Peak Hour Percent
Vaca Valley Parkway (I-505 to I-80)	Arterial (Class II, 4-lane)	2,420*	C	36	1.4%	39	1.6%

Note:

*Table 4.14-4 of the City General Plan EIR defines generalized peak hour two-way volumes in an urbanized area for a Class II (4-lane arterial) as 2,420 for LOS C.

ADT = average daily trips

I-80 = Interstate 80

I-505 = Interstate 505

ITE = Institute of Transportation Engineers

LOS = level of service

Source: City of Vacaville 2013

As described, Class I and II bicycle facilities are provided on Vaca Valley Parkway and on the streets adjacent to the project site. In addition, Vacaville City Coach provides public transit service to the Kaiser Medical Center located across the street from the project site. The proposed project would not modify or interfere with the bicycle and bus facilities adjacent to the project site during construction or operation. During construction, project activities would be confined to the project site and no road closures or detours are anticipated. Operation of the proposed project would include amenities and site improvements for bicyclists and pedestrians such as bicycle racks near the hotel's south building entrance and sidewalks along East Akerly Drive. As a result, the proposed project would not create hazards or barriers for pedestrians, bicyclists, or local transit service. Therefore, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. This impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-2 Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision(b)?

Impact Analysis

According to CEQA Guidelines §15064.3 Subdivision (b)(1), VMT exceeding an applicable threshold of significance may indicate a significant impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact. The City has not yet adopted significance thresholds for VMT. The proposed project would include development of an undeveloped parcel; thereby potentially increasing VMT in comparison to existing conditions. Currently, the closest hotels to the Vaca Valley Business Park include the Quality Inn and Suites at 1050 Orange Drive and the Extended Stay America – Sacramento- Vacaville at 799 Orange Drive. These two hotels are within 0.5 mile of the project site; however, are



located on the east side of the I-80 freeway. The proposed project would provide a hotel use on the west side of I-80 that is centrally located between two freeways and near a regional arterial roadway. Additionally, the proposed project would be within walking distance of the Kaiser Medical Center and Genentech, which would potentially reduce VMT by accommodating visitors of these establishments. Furthermore, the Vaca Valley Business Park Policy Plan is identified in the General Plan and has established land use and infrastructure policies regarding future planned development within the plan area such as the proposed project. Accordingly, the proposed project would not conflict with the City's General Plan, zoning ordinance, or the Vaca Valley Business Park Policy Plan. The impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact TRANS-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Analysis
During construction, the proposed project would generate traffic through the transport of workers, equipment, and materials to and from the project site. The use of roadways by heavy construction equipment can increase the risk to drivers and cyclists in the vicinity of the project site. However, construction equipment and materials would be stored onsite or on the undeveloped area north of the project site, adjacent to New Horizons Way. Construction activities are anticipated to be confined to the project site, and no road closures or detours are anticipated; therefore, there would be no substantial increase in hazards.

The proposed project would construct two 26-foot-wide driveways at the north and south ends of the project site on East Akerly Drive. Vehicles would be able to enter or exit the project site from either driveway along East Akerly Drive. The proposed project would not require new circulation improvements. Roadways in the project vicinity are generally straight with good sight distance, so visibility and access are acceptable. In addition, the proposed project would be consistent with the Vaca Valley Business Park Policy Plan and would implement all applicable design standards included and Americans with Disabilities Act guidelines to maintain efficient streets and paths for vehicles, bicycles, and pedestrians. The City would review all site plans to ensure that all project driveways and walkways would provide clear sight lines and pedestrian safety features. Therefore, operation of the proposed project would not substantially increase hazards due to a design feature, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact TRANS-4 Result in inadequate emergency access?

Impact Analysis

As described, the proposed project would generate traffic through the transport of workers, equipment, and materials to and from the project site. However, construction activities are anticipated to be confined to the project site, and no road closures or detours are anticipated. Additionally, the proposed project would be designed to incorporate all required VFD and VPD standards to ensure that implementation of the proposed project would not result in inadequate emergency access to the project site or areas surrounding the project site, including the Kaiser Permanente Medical Center. Furthermore, the proposed project would not generate significant traffic volumes during operation that would interfere with emergency vehicle travel within the project area. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.18 TRIBAL CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code section 21047 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.18.1 Environmental Setting

This section describes potential tribal cultural resources in the project area, defined as the project site and a 0.25-mile radius around the project site, and evaluates potential impacts to these resources from the construction and operation of project facilities. Under CEQA, local tribes and tribal representatives are the authority for identifying tribal cultural resources.

AB 52

AB 52 mandates consideration of Native American culture as part of the CEQA process. The goal of AB 52 is to promote involvement of California Native American tribes in the decision-making process when it comes to identifying resources of importance to their cultures and developing mitigation for impacts to these resources. To reach this goal, AB 52 establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential tribal cultural resources in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment. On October 18, 2019, staff sent the Yocha Dehe Wintun Nation the AB 52 required information about the proposed project.

Ethnographic Context

The proposed project is located within the traditional tribal territory of the Patwin. The Patwin are a linguistically defined group whose language is in the Penutian family, which also includes the Miwok, Maidu, Costanoan, Yokuts, and other groups in the region. The Patwin occupied an area measuring roughly 90 miles (north-south) by 40 miles (east-west), between the Sacramento River Valley and the San Pablo and Suisun bays (Johnson 1978).

The largest Patwin political unit was the tribelet, which consisted of one primary village and several satellite villages. Villages were most often located near permanent water sources and were primarily occupied in winter, with the population moving to temporary camps in the summer and fall to take advantage of seasonally available resources (Johnson 1978). Village activities were directed by a chief, who managed a wide variety of village economic and ceremonial activities. The nearest recorded village location is that of Ululato, approximately 2.5 miles southwest of the project site, near the center of present-day Vacaville (Johnson 1978, Fig. 1:350).

As with other northern Californian native groups, the Patwin relied on hunting, fishing, and gathering a wide variety of foods, especially deer and salmon. Acorns were a particularly important staple food. These were gathered from hill and mountain oaks, pulverized, and leached with cold water for processing into bread or soup with cooking stones (Johnson 1978). Flat stone slabs and wooden mortars were used to process acorns. Baskets were used for transportation and as milling hoppers. Flaked obsidian and occasionally chert was used in the production of scrapers, knives, projectile points, and other tools. Bone was used to make basketry awls and harpoon points (Johnson 1978).

The historic period in California began with the first sporadic incursions by Spanish explorers. These early expeditions were followed by the establishment of permanent settlements along the coast by Spanish missionaries. During these periods of initial contact and missionization, indigenous populations were decimated by the introduction of Old-World diseases, and traditional lifeways were eroded as local populations were absorbed into the growing Spanish Missions. Priests from both Mission Dolores (established in 1776 in San Francisco) and Mission San Jose (established 1797 in Fremont) actively recruited from among the Patwin population, with 1,800 Patwin neophytes recorded at Mission Dolores, including some from the village of Ululato (Johnson 1978). A series of government policies and independent efforts to forcibly remove indigenous communities followed in the wake of the dissolution of the missions, and indigenous populations continued to decline.

3.18.2 Methodology

To identify tribal cultural resources, Stantec prepared a cultural resources inventory in August and September 2019 (Appendix E). Available literature obtained through a record search performed at the NWIC of CHRIS was consulted for background information, ethnographical information, and to identify any previously recorded archaeological tribal resources in the project area. A Stantec archaeologist performed a pedestrian survey of the project area to identify any potential archaeological cultural resources present in the project area that had not been recorded during previous studies.

Stantec also contacted the NAHC on September 3, 2019, to request a search of the Sacred Lands File for tribal cultural resources in the project area and to obtain a list of Native American contacts who might have knowledge of such resources. A search of the NAHC Sacred Lands File was completed on September 16, 2019, and there was no indication of the presence of Native American cultural resources in the project area (Stantec 2019c; Appendix E). The NAHC also provided a list of three Native American individuals/organizations for further consultation, Chairman Charlie Wright of the Kletsel Dehe Band of Wintun Indians, Chairman Gene Whitehouse of the United Auburn Indian Community of the Auburn Rancheria, and Chairman Anthony Roberts of the Yocha Dehe Wintun Nation. On September 24, 2019, certified letters were sent to each of the contacts provided. Mr. Wright and Mr. Whitehouse both

stated that they are not aware of any resources within the project area and had no further comment. Matthew Lowell, Jr., Tribal Treasurer and Historic Preservation Officer for the Yocha Dehe Wintun Nation, responded on September 23, 2019 that the project is within Yocha Dehe tribal territory. Mr. Lowell further stated that tribal monitoring is not recommended but that Tribal Monitor Supervisor, Robert Geary, should be engaged to provide pre-construction cultural awareness training to project personnel.

AB 52 Consultation Results

Under AB 52, the City is responsible for conducting AB 52 tribal outreach by sending a letter to tribes that have previously expressed an interest in participation by written request. Pursuant to the statute, tribes are required to respond in writing within 30 days. On October 18, 2019, staff sent Yocha Dehe Wintun Nation the AB 52 required information about the proposed project. The Yocha Dehe Wintun Nation Cultural Resources Department responded on November 13, 2019 and concluded that, based on the information provided, the Yocha Dehe Wintun Nation is not aware of any known cultural resources near the project site and no cultural monitor is needed. The Yocha Dehe Wintun Nation provided revisions to the mitigation measures for the proposed project, included their treatment protocol, and recommended cultural sensitivity training for any pre-project personnel. The Yocha Dehe Wintun Nation's revisions to the mitigation measures and recommendations are incorporated in the environmental impact analysis presented in Section 3.5.3 and in the cultural resources inventory report (Appendix E).

3.18.3 Environmental Impact Analysis

This section discusses potential impacts on tribal cultural resources associated with the proposed project and provides mitigation measures where necessary.

Impact TRIB-1 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 California Native American tribe, and that is:

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

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

Impact Analysis

No known tribal cultural resources were identified at the project site or within 0.25 mile of the project site during the archival records search and literature review performed as part of the cultural resources inventory. A field survey of the project area did not identify any archaeological tribal resources at the project site and noted that the project site has been disturbed by grading, construction, and tilling for vegetation management. As discussed above, a search of the NAHC Sacred Lands File was completed on September 16, 2019, and here was no indication of the presence of Native American cultural resources in the project site. Additionally, the Yocha Dehe Wintun Nation responded on

November 13, 2019, and concluded that they are not aware of any known cultural resources near the project site, and as such, no cultural monitor is needed. Therefore, no impacts to known or potential tribal cultural resources would occur.

However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered unique tribal cultural resources. The proposed project would incorporate Mitigation Measure CUL-1, Mitigation Measure CUL-2, and Mitigation Measure CUL-3, which require implementation of standard inadvertent discovery procedures and worker awareness training to reduce potential impacts to previously undiscovered subsurface unique tribal cultural resources and human remains. With implementation of these mitigation measures, potential impacts would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1, Mitigation Measure CUL-2, and Mitigation Measure CUL-3 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
e) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
f) Result in a determination by the waste water 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?	☐	☐	☒	☐
g) 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?	☐	☐	☒	☐
h) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

3.19.1 Environmental Setting

Wastewater Collection/Treatment

Treatment of wastewater from the City's collection system takes place at the Easterly Waste Water Treatment Plant (WWTP), located south of the unincorporated community of Elmira. The Easterly WWTP provides treatment of wastewater discharged from residential, commercial, and industrial development in the City. The Easterly WWTP has an average dry-weather flow capacity of 15 million gallons per day (mgd). The peak dry-weather flow (flows during a typical day without precipitation) is 27 mgd, and the peak wet weather flow (flows during a storm event) is 55 mgd (City of Vacaville 2018b).

The City is in the process of developing a Wastewater Facilities Master Plan following the City's 2015 General Plan Update. As of August 2019, the Wastewater Facilities Master Plan is in the final draft stage and has not been approved by City Council (City of Vacaville 2018b). The draft plan identifies capital improvements needed to ensure the long-term functionality of the City's sewer collection system as planned development occurs. Currently, the Easterly WWTP's average dry weather flow is 7.51 mgd, which is below the facility's 15 mgd capacity and within the design capacity of the WWTP (City of Vacaville 2018b).

According to the Vaca Valley Business Park Policy Plan, proposed development within the plan area boundaries would be served by local sewer lines ranging from 12 to 15 inches. Improvements are proposed as part of the plan to

accommodate future buildout. The improvements were modeled to serve 2,000 gpd per acre across 400 acres, totaling 800,000 gpd average dry weather flow (City of Vacaville 2017).

Stormwater Management

The City's drainage systems include creeks, constructed channels, and an extensive network of storm drainpipes that collect and convey runoff from the streets and adjacent land. In addition, the City has constructed several detention basins to reduce flooding in the City and to capture increased runoff resulting from new development.

The Clean Water Act prohibits the discharge of pollutants to navigable waters from a point source unless authorized by an NPDES permit. The SWRCB is responsible for issuing NPDES permits to cities and counties through RWQCBs, in this case, the Central Valley RWQCB. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-Department of Water Quality) for small municipal separate storm sewer system operators to regulate stormwater discharges under a single permit. Permittees must develop and implement a Stormwater Management Plan with the goal of reducing the discharge of pollutants to the maximum extent practicable. The City is considered a permittee under the statewide general permit. In addition, Chapter 14.26.030 of the City's Municipal Code contains requirements to prevent, control, and reduce stormwater pollution from new development and construction activities.

Water Supply

The City provides potable water to users within the City limits via a network of water mains, transmission mains, reservoirs, groundwater wells, booster pump stations, and treatment plants. Three sources supply the City's water: the Solano Project, the State Water Project, and groundwater from City wells. The primary component of the Solano Project is Lake Berryessa, which provides storage of 1.6 million acre-feet of water. Water from Lake Berryessa is diverted through the Putah Diversion Dam to the Putah South Canal, which transports water to the City. Water from the State Water Project is supplied by the North Bay Aqueduct, which provides 6,100 acre-feet per year through the Solano County Water Agency (City of Vacaville 2018c). Groundwater is extracted from 13 existing wells in the City, which withdraw water primarily from the Tehama Formation. The City's annual groundwater pumping varies. As of 2015, the average annual groundwater pumping was 5,222 acre-feet (City of Vacaville 2018c).

The City updated its Water System Master Plan following the City's 2015 General Plan Update. As of August 2019, the Water System Master Plan was in the final draft stage and has not been approved by City Council (City of Vacaville 2018b). The draft plan presents a model of the City's water system and identifies capital improvements needed to ensure the long-term functionality of the water system as planned development occurs. According to the draft plan, the City's measured average day water demand in 2016 was 14.62 mgd, and the measured average day demand in 2040 was projected to be 25.29 mgd (City of Vacaville 2018c).

The City's 2015 UWMP calculates the past, current, and projected water use and water supply through 2040. The 2015 UWMP calculated the City's current available annual water supply to be 22.4 mgd and calculated the projected water supply available in 2040 to be 29.5 mgd. Based on these calculations, the City's average water demand (14.62 mgd) and future water demand (25.29 mgd) would be below the City's annual (22.4 mgd) and future (29.5 mgd) water supply allocations. Therefore, the 2015 UWMP determined that the City's water supply would be adequate to offset future water demands projected for buildout of the General Plan (City of Vacaville 2016).

Solid Waste

The City contracts with Recology Vacaville Solano to provide weekly solid waste, green waste, and recyclable materials collection for City residents and commercial businesses. Solid waste collected in the City is disposed of at the Recology Hay Road Landfill located at 6426 Hay Road in unincorporated Solano County, approximately 9 miles southeast of the City (City of Vacaville 2019h). The California Department of Resources Recycling and Recovery (CalRecycle) has allocated to the City a disposal rate target of 6.5 pounds of waste per resident per day (City of Vacaville 2015a). As of 2019, the City's disposal rate was 5.3 pounds of waste per resident per day, which was below the CalRecycle target (CalRecycle 2019b).

According to CalRecycle, the maximum permitted throughput is 2,400 tons per day. The total capacity of the landfill is 37 million cubic yards. As of 2019, it was projected that the landfill would reach capacity in 2077 (CalRecycle 2019c). The City has established several recycling programs to reduce the amount of waste disposed at the Hay Road Landfill and, therefore, extend its expected operation. Division 8.08 (solid waste, yard waste, and household hazardous waste) of the Vacaville Municipal Code regulates the collection and disposal of solid waste, yard waste, and household hazardous materials.

Electric Power, Natural Gas, and Telecommunications

PG&E provides electric power and natural gas services to the City. According to the General Plan, 52 percent of the City's energy use is for the residential sector (23 percent electricity and 29 percent natural gas), and 47 percent of the City's energy use is for the commercial/industrial sector (25 percent electricity and 23 percent natural gas) (City of Vacaville 2015a). AT&T provides telecommunication services to the City.

3.19.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, the General Plan EIR, 2015 UWMP, 2018 Draft Wastewater Facilities Master Plan, 2018 Draft Water Supply Master Plan, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the impacts of the proposed project related to utilities and service systems in the City.

3.19.3 Environmental Impact Analysis

This section discusses potential impacts related to utilities and service systems associated with the proposed project and provides mitigation measures where necessary.

Impact UTIL-1 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?

Impact Analysis

Wastewater Treatment

The proposed hotel would include 107 guest rooms and provide other onsite guest amenities, including an indoor swimming pool, fitness room, and dining and gathering area. The proposed project also includes 128 onsite surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities. The proposed project would connect to the existing 6-inch sanitary sewer lateral stub that is connected to the existing 15-inch sanitary

sewer main in East Akerly Drive. Based on land use and standard demand factors, the proposed project is expected to generate approximately 14,872 gpd of wastewater, which is 1,232 gpd greater than the planned capacity.

Wastewater generated by the proposed project would be treated by the Easterly WWTP, which operates in accordance with the regulations of the Central Valley RWCQB and the Clean Water Act. According to the Draft Wastewater Master Plan, the Easterly WWTP flow rate in 2015 was measured at 7.51 mgd, which is well below the WWTP's maximum capacity of 15 mgd. In addition, according to the Vaca Valley Business Park Policy Plan, improvements are proposed as part of the plan to accommodate future buildout. Further, in the sewer capacity memorandum provided by the City's Utilities Department for the proposed project , it states that the Northeast Sector Sewer Master Plan included set amounts of sewer capacity for use in the Vaca Valley Business Park region, which included 24,200 gpd of unallocated sewer capacity set aside for the City to provide additional capacity to one or more large water users on a case-by-case basis. All of this additional sewer capacity remains available for allocation, and thus, 1,232 gpd of this available capacity would be allocated to the project site (City of Vacaville 2020, Appendix A).

The proposed project's estimated wastewater generation would represent a fraction of the Easterly WWTP's capacity and would allow the facility to operate at its current flow rate of 7.51 mgd, which is within the WWTP's capacity. Therefore, the available capacity of the Easterly WWTP would accommodate the wastewater treatment requirements of the proposed project. In addition, because the Easterly WWTP is managed by the City's Wastewater Facility Master Plan, which is intended to ensure the long-term functionality of the City's sewer collection system as planned development occurs, the proposed project would not violate any standards set forth by the Central Valley RWQCB. Therefore, impacts to wastewater treatment requirements would be less than significant.

Water Treatment

The proposed project would extend the existing 6-inch hydrant lateral that connects to the existing 18-inch water line in East Akerly Drive. The proposed project would also install a new 3-inch water line for domestic use and a new 8-inch water line for fire suppression, both of which would connect to the extended 6-inch water line. The proposed project is expected to demand 250 gpd for each room. The proposed project would include 107 rooms. Assuming the proposed hotel is at full capacity, it would require approximately 26,700 gpd of potable water or approximately 11,814 gpd/acre (26,700 gpd / 2.26 acres). The Vaca Valley Business Park Policy Plan determined that adequate offsite water capacity would be available to serve the Policy Plan area based on the maximum water demand of 3,000 gpd per acre (City of Vacaville 2017). Therefore, the proposed project would require a total increase to water supply of 19,920 gpd. According to the City's Water System Master Plan, existing production capacity exceeds maximum day demand by 5.87 mgd, leaving enough capacity to support the increase from the proposed project. Buildout of the City's water system will require a recommended 13.50 mgd of increased production capacity to meet an estimated future maximum day demand of 42.99 mgd (City of Vacaville 2018c). The increase from the proposed project would represent less than 0.05 percent of total buildout demand, a less than significant amount.

Water system improvements would be designed and constructed in accordance with the City's Potable Water System Standard Specifications, Water System Master Plan, the adopted Fire Code, and the General Plan. In addition, the proposed project would be subject to Chapter 11.01 of the City's Municipal Code, requiring payment of the Water System Impact Fee. The purpose of this fee is to provide for the construction of new water mains for potable water and fire protection. Therefore, impacts to water treatment facilities would be less than significant.

Stormwater Drainage

The proposed project would install a new 12-inch storm drain along the property boundary and connect to the existing 24-inch storm drain along East Akerly Drive. The proposed project would create 78,253 square feet of new

impervious surface; it would also include approximately 17,356 square feet of pervious surface consisting of landscaping and bioswales along the project site boundary. The bioswales would collect impervious surface runoff prior to entering the piped storm drain system.

The proposed storm drainage improvements would be designed and constructed in accordance with the City's Storm Drain Standard Specifications. The proposed project would be subject to Chapter 11.01, Development Impact Fees, of the City's Municipal Code, requiring payment of the City's Drainage and Stormwater Detention Facilities Impact Fee. The purpose of this fee is to provide for the construction of drainage and stormwater detention projects to meet the needs of future growth in the City. Payment of this fee would offset the costs of the project's demand on City stormwater drainage facilities. Therefore, impacts to stormwater facilities would be less than significant.

Electric Power and Natural Gas

PG&E is the electric and natural gas provider to the City. Although the proposed project would demand additional electricity and natural gas, the Vaca Valley Business Park Policy Plan determined that development of the plan area would continue to be serviced by PG&E. As part of the proposed project, electrical and gas connections would be made with existing facilities located onsite. The proposed project and future development would be subject to more stringent energy efficiency standards through updates of the California Green Building Code and Title 24. In addition, the proposed project would need to comply with local energy and conservation policies provided in the City's ECAS. No new expanded facilities would be required for electric and natural gas facilities that could potentially cause a significant environmental impact. Therefore, impacts to electric power and natural gas facilities would be less than significant.

Telecommunications

Telecommunication services are provided by AT&T to the project site. As part of the proposed project, electrical and gas connections would be made with existing facilities located onsite. Any additional connections that are deemed necessary during final site design would be placed within utility easements. No expanded capacity would be required for telecommunication facilities that could potentially cause a significant environmental impact. Therefore, impacts to telecommunications facilities would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact UTIL-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Impact Analysis
The City's 2015 UWMP calculates the past, current, and projected water use and water supply through 2040. The 2015 UWMP calculated the City's current available annual water supply to be 22.4 mgd and calculated the projected water supply available in 2040 to be 29.5 mgd. Based on these calculations, the City's average water demand (14.62 mgd) and future water demand (25.29 mgd) would be below the City's annual (22.4 mgd) and future

(29.5 mgd) water supply allocations. Therefore, the 2015 UWMP determined the City's water supply would be adequate to offset future water demands projected for buildout of the General Plan (City of Vacaville 2016).

The proposed project is expected to demand 250 gpd for each room. The proposed project would include 107 rooms. Assuming the proposed hotel is at full capacity, it would require approximately 26,700 gpd of potable water, or approximately 11,814 gpd/acre. The Vaca Valley Business Park Policy Plan determined the offsite potable water system would be able to accommodate development which uses a maximum day demand of 3,000 gpd/acre (City of Vacaville 2017). Therefore, the proposed project would require a total increase to water supply of 19,920 gpd. According to the City's Water System Master Plan, existing production capacity exceeds maximum day demand by 5.87 mgd, leaving enough capacity to support the increase from the proposed project. Buildout of the City's water system will require a recommended 13.50 mgd of increased production capacity to meet an estimated future maximum day demand of 42.99 mgd (City of Vacaville 2018c). The increase from the proposed project would represent less than 0.05 percent of total buildout demand, a less than significant amount. Therefore, impacts to water supplies would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-3 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?

Impact Analysis

The project site is within the Northeast Sector Sewer Master Plan area, specifically within the Lower Northeast Sector Assessment District (City of Vacaville 2009, City of Vacaville 2020). The Northeast Sector Sewer Master Plan has determined the sewer capacity for each parcel within the Vaca Valley Business Park area and has allocated the project site 4,000 gpd/acre for a total of 13,640 gpd.

Based on land use and standard demand factors, the proposed project is expected to generate approximately 14,872 gpd of wastewater, which is 1,232 gpd greater than the planned capacity (City of Vacaville 2020). In the sewer capacity memorandum provided by the City's Utilities Department for the proposed project, it states that the Northeast Sector Sewer Master Plan included set amounts of sewer capacity for use in the Vaca Valley Business Park region, which included 24,200 gpd of unallocated sewer capacity set aside for the City to provide additional capacity to one or more large water users on a case-by-case basis. All of this additional sewer capacity remains available for allocation and thus, 1,232 gpd of this available capacity shall be allocated to the project site (City of Vacaville 2020, Appendix A).

In addition, the proposed project would be subject to Chapter 11.01 of the City's Municipal Code, requiring payment of the Sewer System Impact Fee. The purpose of this fee is to provide for the construction of sewer and wastewater facilities, including sewer drains, treatment plants, and aeration ponds to offset the demand on current wastewater facilities of new development. Therefore, impacts to wastewater treatment facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-4 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?

Impact Analysis

The proposed project would be expected to generate waste during the construction and operation phases; however, it would not be expected to result in inadequate landfill capacity. Solid waste from the project site would be collected and deposited at the Hay Road Landfill approximately 9 miles southeast of the project site. The Hay Road Landfill is approximately 640 acres in size, and its total capacity is 37 million cubic yards. Currently, the landfill is listed as having a remaining capacity of approximately 30 million cubic yards and is expected to operate until 2077 (CalRecycle 2019a).

The proposed project does not involve demolition of structures or require the export of soils from the project site. Any construction waste generated would be minimal and disposed by the project contractor in accordance with the City's established programs that facilitate the diversion and disposal of construction waste. During operation of the proposed project, solid waste would be collected and properly disposed of by Recology Vacaville Solano. Operation of the proposed project is expected to employ up to five full-time employees. According to CalRecycle, the City's annual per capita disposal rate per employee in 2018 was 14.7 pounds. As shown in Table 3.19-1, Estimated Solid Waste Generation, the proposed project would generate approximately 287.5 pounds of solid waste per day.

Table 3.19-1: Estimated Solid Waste Generation

Project Component		Generation Rate	Pounds per Day	Tons per Day	Tons per year
Hotel Employee Staff	5	14.7 (lbs/person/day)	73.5	0.036	13.14
Hotel Rooms	107	2 (lbs/room/day)	214	0.11	40.15
Total	-	-	287.5	0.15	53.29

Notes:
lbs/person/day = pounds per person per day
Source: CalRecycle 2019a

The Hay Road Landfill has approximately 80 percent remaining capacity, and the amount of waste from the proposed project would be a marginal fraction of the City's total solid waste. Based on the Hay Road Landfill permitted intake of 2,400 tons per day, waste generated by the proposed project would represent approximately 0.011 percent of the landfill's daily capacity. Therefore, the proposed project's contribution to solid waste facilities would result in a less than significant impact.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact UTIL-5 Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impact Analysis
The proposed project would be served by curbside solid waste and recycling services, which are standard services for commercial uses in the City. Solid waste disposal must follow the requirements of the contracted waste hauler and disposal facility, which follows local, state, and federal statutes and regulations related to the collection and disposal of solid waste.

California State AB 939 mandates the reduction of solid waste disposal in landfills by 75 percent in 2020. Division 8.08 (solid waste, yard waste, and household hazardous waste) of the City's Municipal Code implements the approved Source Reduction and Recycling Element required by AB 939 and regulates the collection and disposal of solid waste, yard waste, and household hazardous materials. The proposed project would comply with all applicable local, state, and federal statutes and regulations related to solid waste. Therefore, the impacts related to solid waste would be less than significant as the project would comply with all applicable regulations.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

3.20 WILDFIRE

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	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?	☐	☐	☐	☒

3.20.1 Environmental Setting

Highly flammable vegetation and warm dry summers create the potential for wildland fires in the City. High hazard areas in the City include outlying residential parcels and open lands adjacent to residential areas. Open agricultural lands in eastern Vacaville also pose a threat related to grass fires, which can travel very fast and threaten nearby residential areas (City of Vacaville 2015a). The project site is in the northeast portion of the City within the Vaca Valley Business Park Policy Plan area. This portion of the City is an urbanized area and has been partially developed with office, medical, and research uses. Based on review of Fire Hazard Severity Zone maps developed by CALFIRE, the project site is not within or near a state responsibility area and does not contain lands classified as very high fire hazard severity zones (CALFIRE 2007). The U.S. Forest Service has also developed a Wildfire Hazard Potential Map to inform evaluations of wildfire risk and prioritize fuels management across very large landscapes. According to the U.S. Forest Service Wildfire Hazard Potential Map, the risk of wildfire at the project site and in the surrounding area is low to very low (USFS 2018).

3.20.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, and review of CALFIRE's Fire Hazard Severity Zone Map and the U.S. Forest Service Wildfire Hazard Potential Map.

3.20.3 Environmental Impact Analysis

This section discusses potential wildfire impacts on the proposed project and provides mitigation measures where necessary.

Impact WF-1 Substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact Analysis

The project site is not in a state responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007). The proposed project does not involve permanent modification to the existing roadways. During the construction phase, temporary and/or partial street closures may be needed. However, access to the project site and the surrounding area would be maintained in accordance with a Traffic Control Plan. The Traffic Control Plan would identify all detours, appropriate traffic controls, and ensure adequate circulation and emergency access are provided during the construction phase. Therefore, project construction and operation activities would not interfere with an emergency evacuation or response plan, and this impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact WF-2 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?

Impact Analysis

The project site is within the Vaca Valley Business Park Policy Plan, which is designated for development of commercial, office, medical, and institutional uses. The project site and the surrounding area are relatively flat and in an urbanized area. The project site is not in a state responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007). Furthermore, the risk of wildfire in this portion of the city is classified as low to very low (USFS 2018). Development of the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire, and there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact WF-3 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?

Impact Analysis

The project site is not in a state responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007). The proposed project is within the Vaca Valley Business Park Policy Plan area, which is an urbanized area with a low to very low risk of wildfire (USFS 2018). The proposed project would not require the installation or maintenance of associated infrastructure that would exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. As such, there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact WF-4 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?

Impact Analysis

The project site is not in a state responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007). Furthermore, the project site and surrounding area is relatively flat and not in an area subject to landslides or flooding. As such, the proposed project would not 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. As such, there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

MFS-1 Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Impact Analysis

As evaluated in this ISMND, the proposed project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory. Mitigation Measures BIO-1, CUL-1, CUL-2, and CUL-3 have been included herein to reduce the significance of potential impacts to special-status species and habitats, and inadvertent discovery of cultural and tribal cultural resources to a less than significant level.

MFS-2 Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental impacts of a project are considerable when viewed in connection with the effects of past projects, the impacts of other current projects, and the impacts of probable future projects)?

Impact Analysis

The 2013 General Plan and ECAS EIR evaluated the cumulative effects associated with growth and development in the City. The proposed project would not result in any new cumulative impacts not previously identified in the General Plan and ECAS EIR. All cumulative impacts resulting from the proposed project related to air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise would be mitigated with the implementation of Mitigation Measures AIR-1, GEO-1, HYD-1, NOI-1, and NOI-2.

MFS-3 Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?

Impact Analysis

An air quality analysis and a health risk assessment were performed for the proposed project. All environmental impacts which would cause substantial adverse impacts on human beings, either directly or indirectly would be mitigated with the implementation of Mitigation Measures AIR-1.

4.0 REFERENCES

Section 1.0: Introduction

City of Vacaville. 2015a. City of Vacaville General Plan. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=876.

_____. 2017. City of Vacaville Vaca Valley Business Park Policy Plan. Accessed August 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=4413

Section 2.0: Project Description

City of Vacaville (City). 2020. Sewer Capacity Transfer for Home 2 Suites Hotel Project Memorandum, File 420-28-2. Accessed February 2020.

_____. 2009. Northeast Sector Sewer Master Plan Update. Accessed November 4, 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=10909.

_____. 2017. City of Vacaville Vaca Valley Business Park Policy Plan. Accessed August 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=4413

_____**.** 2018a. City of Vacaville Municipal Code. Accessed August 2018. http://www.codepublishing.com/CA/Vacaville/html/Vacaville14/Vacaville1409094.html

Section 3.1: Aesthetics

City of Vacaville. 2015a. City of Vacaville General Plan. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=876.

Section 3.2: Agriculture and Forestry Resources

California Department of Conservation (DOC). 2016. Farmland Mapping and Monitoring Program Important Farmland Mapper. Accessed August 2019. https://maps.conservation.ca.gov/DLRP/CIFF/

City of Vacaville. 2015a. City of Vacaville General Plan. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=876.

Section 3.3: Air Quality

Bay Area Air Quality Management District (BAAQMD). 2017. CEQA Air Quality Guidelines. Accessed January 29, 2019. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

California Air Pollution Control Officers Association (CAPCOA). 2009. CAPCOA Guidance Document – Health Risk Assessments for Proposed Land Use Projects. Accessed September 12, 2019. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

California Air Resources Board (CARB). 2015. Report on Diesel Exhaust. Accessed September 2019. https://ww3.arb.ca.gov/toxics/dieseltac/de-fnds.htm.

_____. 2017a. Review of the Ambient Air Quality Standard for Ozone. Accessed: September 2019. http://www.arb.ca.gov/research/aaqs/ozone-rs/ozone-rs.htm.

_____. 2017b. California State Implementation Plans. Accessed: September 2019. http://www.arb.ca.gov/planning/sip/sip.htm.

_____. 2017c. National and State Ambient Air Quality Standards. Accessed: September 2019. https://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

_____. 2017d. Area Designations Maps / State and National. Accessed: September 2019. http://www.arb.ca.gov/desig/adm/adm.htm.

_____. 2019a. Overview: Diesel Exhaust and Health. Accessed September 2019. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.

Stantec Consulting Services Inc. (Stantec). 2019a. Air Quality and Greenhouse Gas Impact Assessment Model Assumptions and Methodology Home 2 Suites Hotel Project.

United States Geologic Survey (USGS). 2011. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences in California. Accessed: September 2019. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ms/59/MS59_Plate.pdf.

Yolo-Solano Air Quality Management District (YSAQMD). 2007. Handbook for Assessing and Mitigating Air Quality Impacts. Accessed September 2019. http://www.ysaqmd.org/wp-content/uploads/2016/06/CEQAHandbook2007.pdf.

_____. 2015. Triennial Assessment and Plan Update. Accessed September 2019. http://www.ysaqmd.org/wp-content/uploads/Planning/Final-2015-Triennial-Plan.pdf.

Section 3.4: Biological Resources

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. The Jepson Manual: Vascular Plants of California. 2nd edition. University of California Press. Berkeley, California.

California Department of Fish and Wildlife (CDFW). 2014. California Wildlife Habitat Relationships (CWHR), Version 9.0 (personal computer program). California Department of Fish and Wildlife, California Interagency Wildlife Task Group. Accessed July 11, 2019. https://www.wildlife.ca.gov/data/cwhr.

_____. 2019a. Rarefind 5. California Natural Diversity Database (CNDDB). California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. Accessed July 11, 2019. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

_____. 2019b. Special Animals List. CDFW, CNDDB. Periodic Publication. 66 pp. Updated August 2018. Accessed August 2019. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

_____. 2019c. State and Federally Listed Endangered and Threatened Animals of California. CDFW, Biogeographic Data Branch, CNDDB. Updated August 2019. Accessed August 2019. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

_____. 2019d. State and Federally Listed Endangered, Threatened and Rare Plants of California. California Department of Fish and Wildlife, Biogeographic Data Branch, CNDDB. Updated August 2018. Accessed August 2019. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

_____. 2019e. Special Vascular Plants, Bryophytes, and Lichens List. CDFW, CNDDB. Periodic Publication. 127 pp. Updated March 2019. Accessed August 2019. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

_____. 2019f. California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. Accessed August 2019. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

California Native Plant Society (CNPS). 2019. Inventory of Rare and Endangered Plants (Online Edition, V8-02). Sacramento, California. Accessed August 2019. http://www.rareplants.cnps.org.

Google Earth. 2019. Map showing the Project area. Google Earth, 2019. Accessed August 2019. https://www.earth.google.com/web/.

Mayer, K.E., and W.F. Laudenslayer, Jr., eds. 1988. A Guide to Wildlife Habitats of California. Sacramento: California Department of Forestry and Fire Protection (CAL FIRE).

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evans. 2009. A Manual of California Vegetation, 2nd Edition. CNPS, Sacramento, California.

Solano County Watery Agency (SCWA) 2012. Solano Habitat Conservation Plan. Published October 2012. Accessed: August 2018. http://www.scwa2.com/water-supply/habitat/solano-multispecies-habitat-conservation-plan.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

Stantec Consulting Services Inc. (Stantec). 2019b. Biological Resources Technical Report. Home 2 Suites Hotel Project. September 2019.

United States Fish and Wildlife Services (USFWS). 2019a. Trust Resources Report. Information for Planning and Consultation (IpaC). Accessed August 2019. https://ecos.fws.gov/ipac/.

_____. 2019b. USFWS National Wetlands Inventory (NWI). Accessed August 2019. https://www.fws.gov/wetlands/.

Western Regional Climate Center (WRCC). Vacaville Nut Tree Airport (AP) Station, California Analysis for Wetlands (WETS) Table, Period of Record: 1971 to 2019. Accessed, August 8, 2019. https://www.wcc.nrcs.usda.gov/climate/navigate_wets.html.

Section 3.5: Cultural Resources

Griffith, G.E., J.M. Omernik, D.W. Smith, T.D. Cook, E. Tallyn, K. Moseley, and C.B. Johnson. 2016. Ecoregions of California: U.S. Geological Survey Open-File Report 2016-1021 with map, scale 1:1,100,000. Accessed September 2019. http://dx.doi.org/10.3133/ofr20161021.

Koenig, J.B. 1965. Geologic Map of California, 1:250,000 scale, Sacramento Sheet. California Division of Mines and Geology.

Meyer, J. and J. Rosenthal. 2007. Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4. Prepared for Caltrans District 4 Office of Cultural Resources, Oakland, California. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Stantec Consulting Services Inc. (Stantec). 2019c. Home 2 Suites Hotel Project Cultural Resources Inventory Report. Prepared by Stantec Consulting, Inc. for the City of Vacaville.

Section 3.6: Energy

Stantec Consulting Services Inc. (Stantec). 2019a. Air Quality and Greenhouse Gas Impact Assessment Model Assumptions and Methodology Home 2 Suites Hotel Project.

Section 3.7: Geology and Soils

Achievement Engineering Corp (AEC). 2019a. Geotechnical Investigation Report for New Four-Story Commercial Building. PDF.

City of Vacaville (City). 2013. City of Vacaville General Plan Environmental Impact Report and Energy and Conservation Action Strategy. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=881.

_____. 2015a. City of Vacaville General Plan. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=876.

_____. 2015b. Energy and Conservation Action Strategy. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=879.

Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Online resource, http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx. Accessed September 2019.

University of California Museum of Paleontology (UCMP). 2019. Neogene Mammal Mapping Portal (Neomap). Accessed August 2019. http://www.ucmp.berkeley.edu/neomap/.

Section 3.8: Greenhouse Gases

Association of Environmental Professionals. 2015. Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning Local Governments in California. Accessed September 2019. https://califaep.org/docs/AEP_White_Paper_Beyond_2020.pdf.

California Air Resources Board (CARB). 2017e. California's 2017 Climate Change Scoping Plan. Accessed September 2019. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

_____. 2019b. California Greenhouse Gas Emissions for 2000-2017: Trends of Emissions and Other Indicators. Accessed: September 2019. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf.

California Emissions Estimator Model (CalEEMod). California Emissions Estimator Model. Version 2016.31. Accessed September 2018. http://caleemod.com/.

Moser, Susan, G. Fanco, S. Pittiglio, W. Chou, and D. Cayan. 2009. The future is now: an update on climate change science impacts and response options for California. Available: Accessed: September 2019. http://www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2018. CEQA Guidance and Tools – Greenhouse Gases. Accessed September 2019. http://www.airquality.org/LandUseTransportation/Documents/Ch6GHGFinal5-2018.pdf.

Section 3.9: Hazards and Hazardous Materials

Achievement Engineering Corp (AEC). 2019b. Phase I Environmental Site Assessment Report. PDF.

California Department of Forestry and Fire Protection (CALFIRE). 2007. Fire Hazard Severity Zones in State Responsibility Areas. Accessed September 5, 2019. https://frap.fire.ca.gov/media/6233/fhszs_map48.pdf

City of Vacaville (City). 2019a. City of Vacaville North Village Development Project. Accessed September 9, 2019. https://www.ci.vacaville.ca.us/government/community-development/advanced-planning/major-development-projects/north-village.

_____. 2017. City of Vacaville Vaca Valley Business Park Policy Plan. Accessed August 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=4413

Department of Toxic Substances Control (DTSC). 2019. Envirostor: North Village Elementary. Accessed September 9, 2019. Available https://www.envirostor.dtsc.ca.gov/public/.

Solano County Airport Land Use Commission (Solano County ALUC). 2002. Travis Air Force Base Land Use Compatibility Plan. Accessed September 9, 2019. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=3929.

Solano County. 2010. Nut Tree Airport Master Plan. Accessed September 9, 2019. http://www.solanocounty.com/civicax/filebank/blobdload.aspx?blobid=9315

Section 3.10: Hydrology and Water Quality

City of Vacaville (City). 2016. 2015 Urban Water Management Plan Update. Accessed August 2019. http://www.ci.vacaville.ca.us/home/showdocument?id=2224.

_____. 2019b. Groundwater Sustainability. Accessed September 2019 https://www.ci.vacaville.ca.us/government/utilities/groundwater-sustainability

Federal Emergency Management Agency (FEMA). 2019a. Flood Zones. Accessed September 2019 https://www.fema.gov/flood-zones.

_____. 2019b. National Flood Hazard Layer FIRMette. Accessed September 2019. https://msc.fema.gov/portal/search.

_____. 2019c. Letter of Map Amendment & Letter of Map Revision Based on Fill Process. Accessed September 2019 https://www.fema.gov/letter-map-amendment-letter-map-revision-based-fill-process

Section 3.11: Land Use and Planning

City of Vacaville (City). 2017. City of Vacaville Vaca Valley Business Park Policy Plan. Accessed August 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=4413

_____. 2019c. Chapter 14.09.093 Business Park and Industrial Park Districts – BP, Business Park District. Accessed September 2019. https://www.codepublishing.com/CA/Vacaville/#!/Vacaville14/Vacaville1409093.html#14.09.093

_____. 2019d. Chapter 14.09.134 Supplemental Standards, Airport, Helistop, and Helicopter Land Use Compatibility. Accessed September 2019 https://www.codepublishing.com/CA/Vacaville/#!/Vacaville14/Vacaville1409134.html#14.09.134

_____. 2019e. Chapter 14.09.087 Commercial Districts – CG, General Commercial District. Accessed September 2019. https://www.codepublishing.com/CA/Vacaville/#!/Vacaville14/Vacaville1409087.html#14.09.087.030

Solano County. 2010. Nut Tree Airport Master Plan. Accessed September 9, 2019. http://www.solanocounty.com/civicax/filebank/blobdload.aspx?blobid=9315

Solano County Airport Land Use Commission (Solano County ALUC). 2002. Travis Air Force Base Land Use Compatibility Plan. Accessed September 9, 2019. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=3929.

Section 3.12: Mineral Resources

California Department of Conservation (DOC). 1988. DOC Mineral Land Classification map of Aggregate Resources, USGS 7.5 Minute Allendale Quadrangle map. Accessed August 6, 2019. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_156/SR-156_Plate-26.pdf.

_____. 2015. DOC Mineral Land Classification map. Accessed August 6, 2019. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps.

Section 3.13: Noise

California Department of Transportation. 2004. Transportation-and Construction-Induced Vibration Guidance Manual. 2004. Accessed September 10, 2019. http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf.

City of Vacaville (City). 2018a. City of Vacaville Municipal Code. Accessed August 2018. http://www.codepublishing.com/CA/Vacaville/html/Vacaville14/Vacaville1409094.html

Egan, David M. Architectural Acoustics. J. Ross Pub., Pub 2007

Federal Highway Administration. 2006. Construction Noise Handbook. Accessed September 10, 2019. http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/.

Federal Highway Administration. 2011a. Highway Traffic Noise. Accessed September 10, 2019. http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.cfm

_____. 2011b. Analysis and Abatement Guidance document. Accessed September 10, 2019. https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/

Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment. Accessed September 10, 2019. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Section 3.14: Population and Housing

California Department of Finance. 2019a. E-4 Historical Population Estimates for Cities, Counties, and the State, 2001-2010. Accessed August 2019. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/

_____. 2019b. E1 Population Estimates for Cities, Counties and the State – January 1, 2018 and 2019. Accessed August 2019 http://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-1/

Employment Development Department (EDD), 2019. Solano County. Accessed August 2019. https://www.labormarketinfo.edd.ca.gov/file/lfmonth/vall$pds.pdf

Section 3.15: Public Services

City of Vacaville (City). 2013. City of Vacaville General Plan Environmental Impact Report and Energy and Conservation Action Strategy. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=881.

_____**.** 2018a. City of Vacaville Municipal Code. Accessed August 2018. http://www.codepublishing.com/CA/Vacaville/html/Vacaville14/Vacaville1409094.html

_____. 2019f. Vacaville Fire Department (VFD). 2018. 2018 Annual Report. Accessed August 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=13455

_____. 2019g. Police Department. Accessed August 2019. https://www.ci.vacaville.ca.us/departments/police-department

Vacaville Unified School District. 2017. Vacaville Unified School District Commonly Asked Questions – What are Developer Fees? Accessed August 2018. http://www.vacavilleusd.org/Q_A.

Section 3.16: Recreation

City of Vacaville (City). 2015a. City of Vacaville General Plan. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=876.

_____**.** 2018a. City of Vacaville Municipal Code. Accessed August 2018. http://www.codepublishing.com/CA/Vacaville/html/Vacaville14/Vacaville1409094.html

Section 3.17: Transportation

City Coach. 2019. System Overview. Accessed September 2019. http://www.citycoach.com/system-overview/

City of Vacaville (City). 2013. City of Vacaville General Plan Environmental Impact Report and Energy and Conservation Action Strategy. Accessed August 2018. http://www.ci.vacaville.ca.us/index.aspx?page=881.

_____. 2018. City of Vacaville 2018 Traffic Count Data. Provided by City of Vacaville Traffic Department.

Stantec Consulting Services Inc. (Stantec). 2019d. Vacaville Home 2 Suites Hotel Project Trip Generation Memorandum.

Section 3.18: Tribal Cultural Resources

Johnson, P.J. 1978. Patwin. In California, edited by Robert F. Heizer, pp. 350-360. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Section 3.19: Utilities and Service Systems

California Department of Resource Recycling and Recovery (CalRecycle). 2019a. Estimated Solid Waste Generation Rate. Accessed August 2019. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates

_____. 2019b. Disposal Rate Calculator Annual Report 2018. Accessed August 2019. https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator

_____. 2019c. SWIS Facility Detail. Recology Hay Road. Accessed August 2019. https://www2.calrecycle.ca.gov/swfacilities/Directory/48-AA-0002

City of Vacaville (City). 2009. Northeast Sector Sewer Master Plan Update. Accessed November 4, 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=10909.

_____. 2016. 2015 Urban Water Management Plan Update. Accessed August 2019. http://www.ci.vacaville.ca.us/home/showdocument?id=2224.

_____. 2017. City of Vacaville Vaca Valley Business Park Policy Plan. Accessed August 2019. https://www.ci.vacaville.ca.us/home/showdocument?id=4413

_____. 2018b. Wastewater Facilities Master Plan. Accessed 8/26/2019 https://www.ci.vacaville.ca.us/home/showdocument?id=10511

_____. 2018c. 2018 Water Master Plan. Accessed August 2018 https://www.ci.vacaville.ca.us/home/showdocument?id=10509

_____. 2019h. Waste Management. Accessed August 2019. https://www.ci.vacaville.ca.us/departments/public-works/garbage-and-recycling

_____ . 2020. Sewer Capacity Transfer for Home 2 Suites Hotel Project Memorandum, File 420-28-2. Accessed February 2020.

Section 3.20 Wildfire

California Department of Forestry and Fire Protection (CALFIRE). 2007. Fire Hazard Severity Zones in State Responsibility Areas. Accessed September 5, 2019. https://frap.fire.ca.gov/media/6233/fhszs_map48.pdf

United States Forest Service (USFS). 2018. Wildfire Hazard Potential Map. Accessed September 5, 2019. https://www.firelab.org/project/wildfire-hazard-potential

5.0 LIST OF PREPARERS

Principal in Charge ..... Trevor Macenski

Project Manager ..... Anna Radonich

Deputy Project Manager ..... Kaela Johnson

Senior Air Quality Scientist ..... Elena Nuño

Air Quality Analyst ..... Jennifer Elwell

Senior Archaeologist ..... Alisa Reynolds

Archaeologist ..... Leven Kraushaar

Principal Biologist ..... Michelle Tovar

Senior Biologist ..... Jared Elia

Senior Environmental Noise Analyst ..... Tracie Ferguson

Senior Environmental Planner ..... Caitlin Schroeder

GIS/Graphics ..... Paul Glendening

Technical Editor ..... Chris Broderick

Quality Reviewer ..... Christine Abraham

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APPENDIX A

Sewer Capacity Transfer for Home 2 Suites Hotel

UTILITIES DEPARTMENT

Memorandum

Date: January 29, 2020

To: File 420-28-2

Via: Curtis Paxton, Director of Utilities
Jeremy Craig, City Manager

From: Bonnie Robison, Associate Utilities Civil Engineer BR

Subject: Sewer Capacity Transfer for Home 2 Suites Hotel Project

Pc: Aaron Busch, Barton Brierley, Shawn Cunningham, Justen Cole, Christina Castro, Peyman Behvand

The applicant for the proposed Home 2 Suites Hotel project (Project 19-212) has requested an increase in wastewater capacity to be made available to the project. The proposed project site is located at the southwest corner of New Horizons Way and East Akerly Drive in the northwestern portion of the City of Vacaville (City) as shown in Figure 1. The project site is currently a vacant 3.41 acre property (APN 133-120-380).

The project applicant, Haddox Consulting Engineers, is proposing a 107 room, 98,351 square foot (sf), four-story Home 2 Suites hotel. The project also includes a request to subdivide the site into two parcels: Parcel 1 (hotel), 2.26 acres, and Parcel 2 (future development), 1.15 acres.

The project site falls within the boundaries of the 2008 Northeast Sector Sewer Master Plan (NESSMP). In accordance with the NESSMP, the proposed project property has an allocation of wastewater generation up to 4,000 gallons per day (gpd) per acre for average dry weather flow (ADWF), for a total of 13,640 gpd. Based on land use and standard demand factors, the project is projected to generate 14,872 gpd, greater than the planned capacity (Table 1).

Table 1. Sewer Capacity Summary. All values are ADWF.

Site	Planned Capacity (gpd)	Projected Capacity (gpd)	Additional Capacity Requested (gpd)
Parcel 1	9,040	10,272	1,232
Parcel 2	4,600	4,600	0
Total	**13,640**	**14,872**	**1,232**

The NESSMP included set amounts of sewer capacity identified for used in the Vaca Valley Business Park region (VVBP Additional Flow). Of this, there was 24,200 gpd of unallocated sewer capacity set aside allowing the City to provide additional capacity to one or more large water users on a case-by-case basis. All of this sewer capacity remains available for allocation. This sewer capacity can be allocated to parcels tributary to the Vaca Valley Parkway Lift Station and included in the Lower NESAD Plan Area (identified in the NESSMP), as long as pipeline capacity is available. The City has determined that the additional capacity is available in the downstream sewer system. Any allocation of sewer capacity is subject to Utilities Department and City Manager approval. Allocating sewer capacity to a property does not exempt the project from any sewer connection fees.

In response to the request for additional capacity from the project applicant, the City shall reallocate sewer capacity from the unallocated portion of the VVBP Additional Flow to the newly created parcel as follows:

- 1,232 gpd shall be allocated to Parcel 1

Approved by:

Curtis D. Paxton, Director of Utilities — Date: 01/29/2020

Jeremy Craig, City Manager — Date: 02/04/2020

Attachment:
Figure 1 Site Location

Figure 1
Site Location



APPENDIX B

Air Quality and Greenhouse Gas Impact Assumptions Model Assumptions and Methodology Report

Stantec

Memo

To:	City of Vacaville	From:	Elena Nuño, Senior Air Quality Scientist Walnut Creek
File:	Home 2 Suites Hotel	Date:	February 19, 2020

Reference: Home 2 Suites Hotel Air Quality Modeling

The air quality modeling prepared for the Home 2 Suites Hotel originally assumed a 12-month construction schedule starting in January 2020 and ending in December 2020. The new anticipated construction schedule still assumes a 12-month construction duration, but the new estimated construction dates are August 2020 through August 2021.

The previously prepared analysis provides a conservative analysis as all the emissions would occur within one calendar year, as such the modeling has not been updated to reflect the new calendar dates, but the regional emissions have been divided between the two calendar years to determine the project's significance. The localized and construction health risk assessment are based on maximum daily and annual emissions, as such the previously prepared modeling provides a worst-case scenario.

Based on the above information, the previously prepared air quality modeling remains valid.

Stantec Consulting Services Inc.

Elena Nuno
Project Manager
Phone: 559.355.0580
elena.nuno@stantec.com

Attachment: Air Quality and Greenhouse Gas Appendix

Air Quality and Greenhouse Gas Impact Assessment Model Assumptions and Methodology Home 2 Suites Hotel Project

August 26, 2019

Prepared for:

City of Vacaville
Public Works Department
Engineering Services Division
650 Merchant Street
Vacaville, California 95688

Prepared by:

Stantec Consulting Services, Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, California 94597

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1.0 MODEL PARAMETER AND ASSUMPTIONS

1.1 MODEL SELECTION

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors are the emission rate of a pollutant given the activity over time, for example, grams of NO_X per horsepower-hour. The California Air Resources Board (ARB) has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

The model was developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

Construction emissions, emissions from soil disturbance, and emissions from vehicle travel on paved and unpaved roads were estimated using CalEEMod version 2016.3.2.

1.2 CONSTRUCTION MODELING ASSUMPTIONS

1.2.1 Schedule

Construction is assumed to begin in January of 2020 and be completed by December 2020. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required by CEQA guidelines. The construction schedule is provided in Table 1.

Table 1: Construction Schedule

Phase	Anticipated Start Date	Anticipated End Date	Total Number of Days
Site Preparation	1/6/2020	1/8/2020	3
Grading	1/9/2020	1/16/2020	6
Building Construction	1/17/2020	11/19/2020	220
Paving	11/20/2020	12/3/2020	10

Architectural Coating	12/04/2020	12/17/2020	10

1.2.2 Construction Off-Road Equipment.

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

The construction equipment list is provided in Table 2.

Table 2: Construction Equipment Assumptions

Phase	Equipment Type	Unit Amount	Hours/day	Horsepower	Load Factor
Site Preparation	Graders	1	8	187	0.41
	Scraper	1	8	367	0.48
	Tractors/Loaders/Backhoes	1	7	97	0.37
Grading	Graders	1	8	187	0.41
	Rubber Tire Dozers	1	8	247	0.4
	Tractors/Loaders/Backhoes	2	7	97	0.37
Building Construction	Cranes	1	8	231	0.29
	Forklifts	2	7	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	1	6	97	0.37
	Welders	3	8	46	0.45
Paving	Cement and Mortar Mixers	1	8	9	0.56
	Pavers	1	8	130	0.42
	Paving Equipment	1	8	132	0.36
	Rollers	2	8	80	0.38
	Tractors/Loaders/Backhoes	1	8	97	0.37
Architectural Coating	Air Compressors	1	6	78	0.48

1.2.3 On-Road Construction-Related Vehicle Trips

Off-site construction emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM10 and PM2.5). Table 3 provides a summary of the construction-related vehicle trips. CalEEMod default values were used to estimate the number of construction-related vehicle trips. CalEEMod quantifies the number of construction workers by multiplying 1.25 times the number of pieces of equipment for all phases (except Building

Construction and Architectural Coating). The number of worker trips was determined by the Traffic Impact Study for the project. The default values for hauling trips are based on the assumption that a truck can haul 20 tons (or 16 cubic yards) of material per load. If one load of material is delivered, CalEEMod assumes that one haul truck importing material will also have a return trip with an empty truck (e.g., 2 one-way trips).

The fleet mix for worker trips is light-duty passenger vehicles to light-duty trucks. The vendor trips fleet mix is composed of a mixture of medium and heavy-duty diesel trucks. The hauling trips are assumed to be 100% heavy-duty diesel truck trips.

CalEEMod default trip lengths were used for the worker (10.8 miles), vendor (7.3 miles), and hauling trips (20 miles).

Table 3: Construction Related Vehicle Trips

Phase	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Grading	10	0	0	10.8	7.3	20
Architectural Coating	10	0	0	10.8	7.3	20
Site Preparation	8	0	0	10.8	7.3	20
Building Construction	48	19	0	10.8	7.3	20
Paving	15	0	0	10.8	7.3	20

1.3 OPERATIONAL MODELING ASSUMPTIONS

Operational emissions are those emissions that occur during operation of the proposed project. The primary sources are summarized below.

1.3.1 Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site.

Table 1 in the Transportation Impact Study (TIS) provides a summary of the daily trip generation based on the project description at the time of preparation. Results of the TIS are used in CalEEMod to reflect accurate trip generation values.

1.3.2 Vehicle Fleet Mix

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline- and diesel-powered vehicles).

The default fleet mix for the Yolo-Solano AQMD was used for this project. Using the trip generation above, 976,676 trips are expected to be generated annually, split among vehicle classes as determined by the YSAQMD.

1.3.3 Area Sources

Area sources consist of wood burning devices, consumer products, area architectural coatings and landscaping emissions. It is assumed that the project would not contain any wood burning devices.

1.3.4 Consumer Products

Consumer products are various solvents used in non-industrial applications that emit ROGs during their product use. These typically include cleaning supplies and aerosols. The default CalEEMod value was used for this project.

1.3.5 Architectural Coatings (Painting)

Paints release VOC emissions. The building would be repainted on occasion. CalEEMod defaults were used for this purpose.

1.3.6 Landscaping Emissions

CalEEMod default duration for which landscaping equipment would be used were utilized to estimate potential emissions for the proposed project.

1.3.7 Energy Use

The emissions associated with the building electricity and natural gas usage are estimated based on the land use size and type. The electricity energy use is in units of kilowatt hours per size metric for each land use type. Natural gas use is in units of a thousand British Thermal Units per size metric for each land use type.

1.3.8 Water and Wastewater Use

Supplying and treating water for building use generates GHG emissions. Depending on the specific water supply used or treatment method used these numbers can vary over a wide range. Supplying water is bringing the water from its primary source such as the ground, river, or snowpack to the treatment plant. Distributing the water is bringing the water from the treatment plant to the end users. The electricity intensity factors are multiplied by the utility GHG emissions intensity factors and are classified as indirect emissions.

Wastewater may also have direct emissions of GHGs. These depend on the type of wastewater treatment system (e.g. septic, aerobic or lagoons) used and therefore the wastewater treatment type percentages are variables.

The CalEEMod default indoor and outdoor water use quantities were used in the analysis.

1.3.9 Solid Waste

GHG emissions are associated with the disposal of solid waste generated by the proposed project into landfills. Solid waste use was based on CalEEMod default values.

MODELING RESULTS

Home 2 Suites - Solano-San Francisco County, Annual

Home 2 Suites

Solano-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	30.96	1000sqft	0.71	30,959.00	0
Parking Lot	135.00	Space	1.21	54,000.00	0
Hotel	107.00	Room	0.35	56,651.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - PD

Construction Phase -

Trips and VMT - Applicant assumes 15 workers maximum during peak construction period. 25 utilized for modeling to be conservative (50 trips).

Vehicle Trips - From Trip Gen Memo

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	30,960.00	30,959.00
tblLandUse	LandUseSquareFeet	155,364.00	56,651.00

tblLandUse	LotAcreage	3.57	0.35
tblTripsAndVMT	WorkerTripNumber	59.00	50.00
tblVehicleTrips	ST_TR	8.19	6.42
tblVehicleTrips	SU_TR	5.95	4.91
tblVehicleTrips	WD_TR	8.17	4.46
tblWater	IndoorWaterUseRate	2,714,244.39	7,689,600.00

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					
2020	0.6135	2.3809	1.9767	4.1300e-003	0.0838	0.1141	0.1979	0.0272	0.1091	0.1363	0.0000	356.0229	356.0229	0.0564	0.0000	357.4337
Maximum	**0.6135**	**2.3809**	**1.9767**	**4.1300e-003**	**0.0838**	**0.1141**	**0.1979**	**0.0272**	**0.1091**	**0.1363**	**0.0000**	**356.0229**	**356.0229**	**0.0564**	**0.0000**	**357.4337**

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					
2020	0.6135	2.3809	1.9767	4.1300e-003	0.0838	0.1141	0.1979	0.0272	0.1091	0.1363	0.0000	356.0226	356.0226	0.0564	0.0000	357.4334
Maximum	**0.6135**	**2.3809**	**1.9767**	**4.1300e-003**	**0.0838**	**0.1141**	**0.1979**	**0.0272**	**0.1091**	**0.1363**	**0.0000**	**356.0226**	**356.0226**	**0.0564**	**0.0000**	**357.4334**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-6-2020	4-5-2020	0.7408	0.7408
2	4-6-2020	7-5-2020	0.7382	0.7382
3	7-6-2020	9-30-2020	0.7058	0.7058
		Highest	0.7408	0.7408

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	0.2583	2.0000e-005	2.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.2000e-003
Energy	0.0135	0.1231	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003	0.0000	265.0332	265.0332	8.4900e-003	3.6800e-003	266.3428
Mobile	0.1444	0.8125	1.3967	4.9600e-003	0.3652	4.4300e-003	0.3696	0.0979	4.1600e-003	0.1020	0.0000	456.3014	456.3014	0.0226	0.0000	456.8659
Waste						0.0000	0.0000		0.0000	0.0000	11.8912	0.0000	11.8912	0.7028	0.0000	29.4600
Water						0.0000	0.0000		0.0000	0.0000	2.4396	12.4114	14.8510	0.2511	6.0300e-003	22.9269
Total	**0.4163**	**0.9355**	**1.5026**	**5.7000e-003**	**0.3652**	**0.0138**	**0.3790**	**0.0979**	**0.0135**	**0.1114**	**14.3308**	**733.7509**	**748.0817**	**0.9850**	**9.7100e-003**	**775.6007**

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	0.2583	2.0000e-005	2.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.2000e-003
Energy	0.0135	0.1231	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003	0.0000	265.0332	265.0332	8.4900e-003	3.6800e-003	266.3428
Mobile	0.1444	0.8125	1.3967	4.9600e-003	0.3652	4.4300e-003	0.3696	0.0979	4.1600e-003	0.1020	0.0000	456.3014	456.3014	0.0226	0.0000	456.8659
Waste						0.0000	0.0000		0.0000	0.0000	11.8912	0.0000	11.8912	0.7028	0.0000	29.4600
Water						0.0000	0.0000		0.0000	0.0000	2.4396	12.4114	14.8510	0.2511	6.0300e-003	22.9269
Total	**0.4163**	**0.9355**	**1.5026**	**5.7000e-003**	**0.3652**	**0.0138**	**0.3790**	**0.0979**	**0.0135**	**0.1114**	**14.3308**	**733.7509**	**748.0817**	**0.9850**	**9.7100e-003**	**775.6007**

	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	Site Preparation	Site Preparation	1/6/2020	1/8/2020	5	3	
2	Grading	Grading	1/9/2020	1/16/2020	5	6	
3	Building Construction	Building Construction	1/17/2020	11/19/2020	5	220	
4	Paving	Paving	11/20/2020	12/3/2020	5	10	
5	Architectural Coating	Architectural Coating	12/4/2020	12/17/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.92

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 84,977; Non-Residential Outdoor: 28,326; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	50.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	**2.4800e-003**	**0.0299**	**0.0169**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0700e-003**	**1.3300e-003**	**0.0000**	**3.2290**	**3.2290**	**1.0400e-003**	**0.0000**	**3.2551**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0867	0.0867	0.0000	0.0000	0.0867
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0867**	**0.0867**	**0.0000**	**0.0000**	**0.0867**

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	**2.4800e-003**	**0.0299**	**0.0169**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0700e-003**	**1.3300e-003**	**0.0000**	**3.2290**	**3.2290**	**1.0400e-003**	**0.0000**	**3.2551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0867	0.0867	0.0000	0.0000	0.0867
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0867**	**0.0867**	**0.0000**	**0.0000**	**0.0867**

3.3 Grading - 2020

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2167	0.2167	1.0000e-005	0.0000	0.2168
Total	**1.1000e-004**	**8.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2167**	**0.2167**	**1.0000e-005**	**0.0000**	**0.2168**

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2167	0.2167	1.0000e-005	0.0000	0.2168
Total	**1.1000e-004**	**8.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2167**	**0.2167**	**1.0000e-005**	**0.0000**	**0.2168**

3.4 Building Construction - 2020

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	0.2517	1.9177	1.6387	2.7500e-003		0.1043	0.1043		0.1000	0.1000	0.0000	228.4088	228.4088	0.0464	0.0000	229.5678
Total	**0.2517**	**1.9177**	**1.6387**	**2.7500e-003**		**0.1043**	**0.1043**		**0.1000**	**0.1000**	**0.0000**	**228.4088**	**228.4088**	**0.0464**	**0.0000**	**229.5678**

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	0.0000	0.0000
Vendor	0.0113	0.2885	0.0802	7.3000e-004	0.0167	1.5100e-003	0.0182	4.8200e-003	1.4400e-003	6.2700e-003	0.0000	68.9148	68.9148	3.6900e-003	0.0000	69.0070
Worker	0.0200	0.0141	0.1384	4.4000e-004	0.0437	3.0000e-004	0.0440	0.0116	2.8000e-004	0.0119	0.0000	39.7289	39.7289	9.9000e-004	0.0000	39.7538
Total	**0.0313**	**0.3025**	**0.2186**	**1.1700e-003**	**0.0604**	**1.8100e-003**	**0.0622**	**0.0164**	**1.7200e-003**	**0.0182**	**0.0000**	**108.6437**	**108.6437**	**4.6800e-003**	**0.0000**	**108.7608**

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	0.2517	1.9177	1.6387	2.7500e-003		0.1043	0.1043		0.1000	0.1000	0.0000	228.4086	228.4086	0.0464	0.0000	229.5675
Total	**0.2517**	**1.9177**	**1.6387**	**2.7500e-003**		**0.1043**	**0.1043**		**0.1000**	**0.1000**	**0.0000**	**228.4086**	**228.4086**	**0.0464**	**0.0000**	**229.5675**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0113	0.2885	0.0802	7.3000e-004	0.0167	1.5100e-003	0.0182	4.8200e-003	1.4400e-003	6.2700e-003	0.0000	68.9148	68.9148	3.6900e-003	0.0000	69.0070
Worker	0.0200	0.0141	0.1384	4.4000e-004	0.0437	3.0000e-004	0.0440	0.0116	2.8000e-004	0.0119	0.0000	39.7289	39.7289	9.9000e-004	0.0000	39.7538
Total	**0.0313**	**0.3025**	**0.2186**	**1.1700e-003**	**0.0604**	**1.8100e-003**	**0.0622**	**0.0164**	**1.7200e-003**	**0.0182**	**0.0000**	**108.6437**	**108.6437**	**4.6800e-003**	**0.0000**	**108.7608**

3.5 Paving - 2020

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	1.8900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5418	0.5418	1.0000e-005	0.0000	0.5421
Total	**2.7000e-004**	**1.9000e-004**	**1.8900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5418**	**0.5418**	**1.0000e-005**	**0.0000**	**0.5421**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	1.8900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5418	0.5418	1.0000e-005	0.0000	0.5421
Total	**2.7000e-004**	**1.9000e-004**	**1.8900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5418**	**0.5418**	**1.0000e-005**	**0.0000**	**0.5421**

3.6 Architectural Coating - 2020

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					
Archit. Coating	0.3131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.3143**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.5100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4334	0.4334	1.0000e-005	0.0000	0.4337
Total	**2.2000e-004**	**1.5000e-004**	**1.5100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4334**	**0.4334**	**1.0000e-005**	**0.0000**	**0.4337**

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					
Archit. Coating	0.3131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.3143**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.5100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4334	0.4334	1.0000e-005	0.0000	0.4337

Total	**2.2000e-004**	**1.5000e-004**	**1.5100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4334**	**0.4334**	**1.0000e-005**	**0.0000**	**0.4337**

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	0.1444	0.8125	1.3967	4.9600e-003	0.3652	4.4300e-003	0.3696	0.0979	4.1600e-003	0.1020	0.0000	456.3014	456.3014	0.0226	0.0000	456.8659
Unmitigated	0.1444	0.8125	1.3967	4.9600e-003	0.3652	4.4300e-003	0.3696	0.0979	4.1600e-003	0.1020	0.0000	456.3014	456.3014	0.0226	0.0000	456.8659

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	477.22	686.94	525.37	976,676	976,676
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	477.22	686.94	525.37	976,676	976,676

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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Hotel	0.584264	0.036754	0.174658	0.112986	0.019233	0.005457	0.009466	0.043414	0.003239	0.002257	0.006611	0.000609	0.001053
Other Non-Asphalt Surfaces	0.584264	0.036754	0.174658	0.112986	0.019233	0.005457	0.009466	0.043414	0.003239	0.002257	0.006611	0.000609	0.001053
Parking Lot	0.584264	0.036754	0.174658	0.112986	0.019233	0.005457	0.009466	0.043414	0.003239	0.002257	0.006611	0.000609	0.001053

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	131.0791	131.0791	5.9300e-003	1.2300e-003	131.5927
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	131.0791	131.0791	5.9300e-003	1.2300e-003	131.5927
NaturalGas Mitigated	0.0135	0.1231	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003	0.0000	133.9541	133.9541	2.5700e-003	2.4600e-003	134.7502
NaturalGas Unmitigated	0.0135	0.1231	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003	0.0000	133.9541	133.9541	2.5700e-003	2.4600e-003	134.7502

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					
Hotel	2.51021e+006	0.0135	0.1231	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003	0.0000	133.9541	133.9541	2.5700e-003	2.4600e-003	134.7502

Other Non-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	0.0000	0.0000
Parking Lot	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	0.0000	0.0000
Total		**0.0135**	**0.1231**	**0.1034**	**7.4000e-004**		**9.3500e-003**	**9.3500e-003**		**9.3500e-003**	**9.3500e-003**	**0.0000**	**133.9541**	**133.9541**	**2.5700e-003**	**2.4600e-003**	**134.7502**

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					
Hotel	2.51021e+006	0.0135	0.1231	0.1034	7.4000e-004		9.3500e-003	9.3500e-003		9.3500e-003	9.3500e-003	0.0000	133.9541	133.9541	2.5700e-003	2.4600e-003	134.7502
Other Non-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	0.0000	0.0000
Parking Lot	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	0.0000	0.0000
Total		**0.0135**	**0.1231**	**0.1034**	**7.4000e-004**		**9.3500e-003**	**9.3500e-003**		**9.3500e-003**	**9.3500e-003**	**0.0000**	**133.9541**	**133.9541**	**2.5700e-003**	**2.4600e-003**	**134.7502**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	431681	125.5808	5.6800e-003	1.1700e-003	126.0729
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	18900	5.4982	2.5000e-004	5.0000e-005	5.5198
Total		**131.0791**	**5.9300e-003**	**1.2200e-003**	**131.5927**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	431681	125.5808	5.6800e-003	1.1700e-003	126.0729
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	18900	5.4982	2.5000e-004	5.0000e-005	5.5198
Total		**131.0791**	**5.9300e-003**	**1.2200e-003**	**131.5927**

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	0.2583	2.0000e-005	2.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.2000e-003
Unmitigated	0.2583	2.0000e-005	2.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.2000e-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	tons/yr										MT/yr					
Architectural Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2267					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.2000e-003
Total	**0.2583**	**2.0000e-005**	**2.5200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.8800e-003**	**4.8800e-003**	**1.0000e-005**	**0.0000**	**5.2000e-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	tons/yr										MT/yr					
Architectural Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2267					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8800e-003	4.8800e-003	1.0000e-005	0.0000	5.2000e-003
Total	**0.2583**	**2.0000e-005**	**2.5200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.8800e-003**	**4.8800e-003**	**1.0000e-005**	**0.0000**	**5.2000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.8510	0.2511	6.0300e-003	22.9269
Unmitigated	14.8510	0.2511	6.0300e-003	22.9269

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	7.6896 / 0.301583	14.8510	0.2511	6.0300e-003	22.9269
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**14.8510**	**0.2511**	**6.0300e-003**	**22.9269**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	7.6896 / 0.301583	14.8510	0.2511	6.0300e-003	22.9269
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**14.8510**	**0.2511**	**6.0300e-003**	**22.9269**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.8912	0.7028	0.0000	29.4600
Unmitigated	11.8912	0.7028	0.0000	29.4600

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	58.58	11.8912	0.7028	0.0000	29.4600
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**11.8912**	**0.7028**	**0.0000**	**29.4600**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	58.58	11.8912	0.7028	0.0000	29.4600
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**11.8912**	**0.7028**	**0.0000**	**29.4600**

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 C

Health Risk Assessment Memorandum

Home 2 Suites Hotel Project

Construction Health Risk Assessment

August 29, 2019

Prepared for:

City of Vacaville
Planning Division
650 Merchant Street
Vacaville, CA 95688

Prepared by:

Stantec Consulting Services Inc.
7502 N. Colonial, Suite 101
Fresno, CA 93711

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Abbreviations

$\mu g/m^3$	Microgram per Cubic Meter
AERMOD	Atmospheric Dispersion Modeling System
APN	assessor's parcel number
CARB	California Air Resources Board
ASF	Age Sensitivity Factor
BAAQMD	Bay Area Air Quality Management District
CalEEMod	California Emission Estimator Model
CAPCOA	California Air Pollution Control Officer's Association
CEQA	California Environmental Quality Act
CPF	Cancer Potency Factor
CO	carbon monoxide
DPM	Diesel Particulate Matter
g/s	Gram Per Second
HI	hazard index
HRA	Health Risk Assessment
MEI	maximally exposed individual
NO_X	oxides of nitrogen
OEHHA	Office of Environmental Health Hazard Assessment
$PM_{2.5}$	Particulate Matter Less Than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Particulate Matter Less Than 10 Micrometers in Diameter
REL	reference exposure level
ROG	reactive organic gases
TACs	Toxic Air Contaminants
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

A Health risk Assessment (HRA) was prepared evaluating potential air quality impacts for construction of the proposed Home 2 Suites Hotel Project (proposed project) located near the southwest corner of Akery Drive and New Horizons Way in the City of Vacaville, California.

This HRA provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality as it relates to the construction HRA. This evaluation was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Air Quality Guidelines. Where applicable, guidelines and methodologies from the California Air Resources Board (CARB), California Office of Environmental Health Hazard Assessment (OEHHA), and the United States Environmental Protection Agency (USEPA) were followed.

1.1 PROJECT LOCATION AND DESCRIPTION

The proposed project would be located on assessor's parcel number (APN) 0133-120-380 within the Vaca Valley Business Park Policy Plan area. The applicant is proposing to subdivide this parcel and construct a four-story hotel on approximately 2.26 acres. The proposed hotel would include 107 guest rooms and provide other on-site guest amenities including, an indoor swimming pool, fitness room, and dining/gathering area. The proposed project also includes 135 on-site surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities.

Emissions estimates used for the construction HRA were obtained from the CalEEMod output files prepared for the Home 2 Suites Hotel Project Air Quality Analysis (Stantec Consulting Services Inc. 2019). The relevant CalEEMod data are included in Appendix A of this HRA report. Based on the parameters provided in the Home 2 Suites Hotel Project Air Quality Analysis, construction is expected to commence in the January 2020 and last through December 2020. The project was assumed to be occupied beginning in 2021, following the completion of construction.

The project site is surrounded by the following land uses:

- **North.** Undeveloped land is located north of the project site, beyond which lies New Horizons Way followed by undeveloped land within the Vaca Valley Business Park that is designated Business Park by the City's General Plan.
- **South.** Undeveloped land, identified as APN 0133-120-540, and Horse Creek are located south of the project site. Beyond Horse Creek lies Horse Creek Drive followed by undeveloped land, which is within the Vaca Valley Business Park and designated Business Park by the City's General Plan. I-80 is approximately 0.25 miles south of the project site.
- **West.** Genentech's Vacaville Campus, which also includes an 8.9-megawatt solar facility, is located west of the project site, across Grassland Drive. I-505 is located approximately 0.5 miles west of the project site.



- **East.** Kaiser Permanente Medical Center is located east of the project site, across East Akerly Drive.

The project location and 1,000-foot buffer are shown in **Figure 1**. The project's site plan is shown overlaid on a local vicinity map in **Figure 2**.

HOME 2 SUITES HOTEL PROJECT

Introduction
August 29, 2019

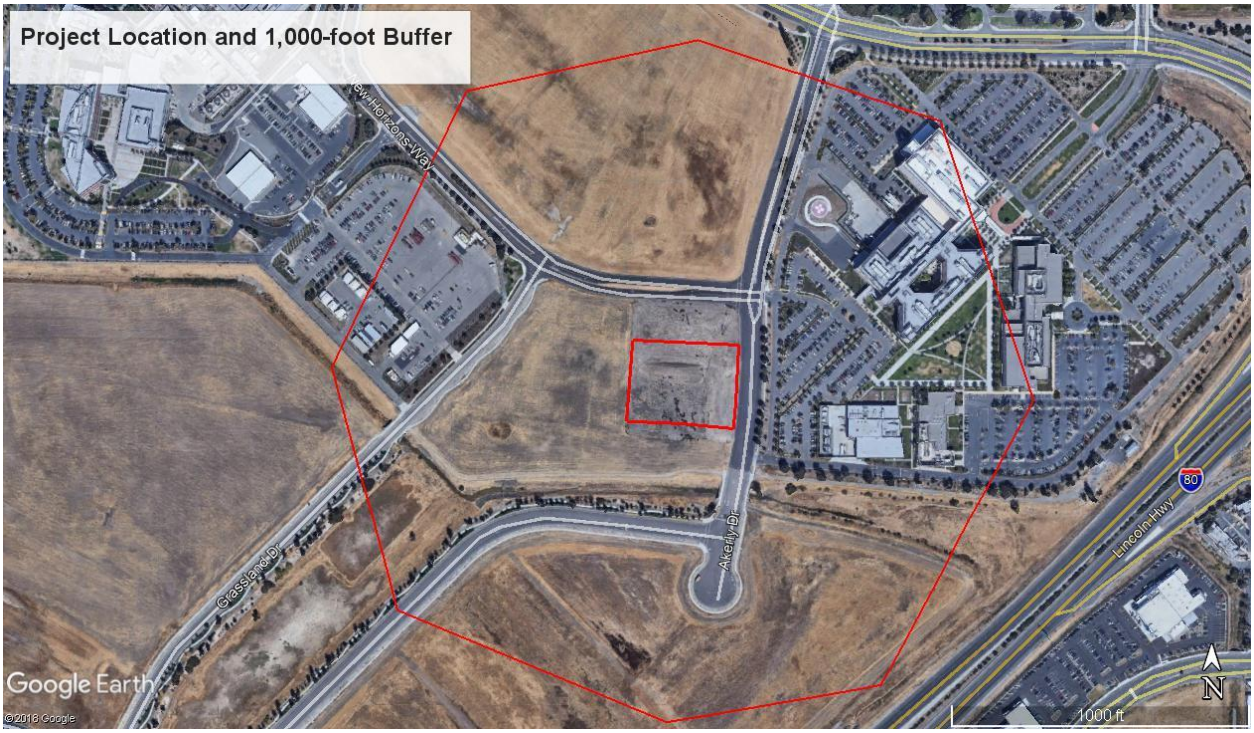

Figure 1 - Project Location and 1,000-foot Buffer



Figure 2 - Site Plan

1.2 PURPOSE

The purpose of the construction HRA is to assess potential criteria pollutant and health impacts that would result from construction of the proposed project, consistent with guidelines and methodologies from the BAAQMD, CARB, OEHHA, and the USEPA. Consistent with the methods recommended in those guidelines, the HRA evaluated the estimated excess lifetime cancer risk and particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$) concentrations associated with diesel exhaust that would be emitted by on-site construction activities and diesel and gasoline exhaust emitted from vehicles associated with trips generated during construction.

Health risks were estimated for sensitive receptors located with 1,000 feet of the project boundary. A sensitive receptor is defined by the BAAQMD as the following: “Facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas.” The nearest sensitive receptors are patients occupying the buildings that comprise the Kaiser Permanente Medical Center, the closest of which is located approximately 285 feet to the east of the project site.

1.3 SUMMARY OF RESULTS

On the basis of the assessment provided herein, the project’s construction emissions would not exceed any of the project-level health risk significance thresholds adopted for this assessment. Therefore, project-related emissions would not result in significant health impacts to nearby existing sensitive receptors during construction.

1.4 GENERAL HEALTH RISKS OF TOXICS

Determining how hazardous a substance is depends on many factors, including the amount of the substance in the air, how it enters the body, how long the exposure lasts, and what organs in the body are affected. One major way hazardous substances might enter the body is through inhalation of either gases or particulates. Many gases and very small particles that penetrate deeply into the lungs are potentially harmful and can contribute to a variety of health problems. Exhaust from diesel engines is a major source of harmful airborne particles. The inhalation of diesel exhaust particulates is associated with both cancer and non-cancer health effects.

OEHHA has determined that long-term exposure to diesel exhaust particulates poses the highest cancer risk of any toxic air contaminant (TAC) it has evaluated. Exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheaded-ness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Improvements to diesel fuel and diesel engines have reduced emissions of some of the contaminants. When fully implemented these improvements result in a 75 percent reduction in particle emissions from



diesel-powered trucks and other equipment today as compared to year 2000 levels and an 85 percent reduction is expected by 2020.[1] Similarly, improvements have been made to significantly reduce TAC emissions from gasoline-powered vehicles. These improvements are anticipated to continue into the foreseeable future.

1.4.1 Analysis of Site-Specific Toxics

According to CARB, when conducting an HRA, the surrogate for whole diesel exhaust is diesel particulate matter (DPM), and is used as the basis for the potential risk calculations.[2] When conducting an HRA, the potential cancer risk from inhalation exposure to DPM will outweigh the potential noncancerous health impacts. Therefore, inhalation cancer risk is required for every HRA. When comparing whole diesel exhaust to speciated diesel exhaust (i.e., speciation means looking at the individual components of the exhaust, such as polynuclear aromatic hydrocarbons and metals), potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components. For this reason, there are few situations where an analysis of multi-pathway risk is necessary.[3] The analysis herein assesses whole diesel exhaust emissions as DPM and gasoline exhaust. For the purposes of this assessment, DPM and gasoline exhaust are represented as $PM_{2.5}$ exhaust emissions.

1.4.2 Significance Criteria

The project site is located in the Solano County portion of the Sacramento Valley Air Basin, within the jurisdiction of the Yolo-Solano Air Quality Management District. The Yolo-Solano Air Quality Management District has not adopted standards of significance to assess construction health risk impacts. In accordance with CEQA Guidelines Section 15064.7 (Thresholds of Significance), the City exercises its own discretion to use the significance thresholds in the BAAQMD's CEQA thresholds based on substantial evidence contained in BAAQMD's record for adoption of the thresholds (which is relied on and incorporated herein).

The BAAQMD has established a maximum threshold for land use projects that have the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants. The BAAQMD thresholds of significance for toxic air contaminants for single sources are: 1) probability of contracting cancer for the maximally exposed individual (MEI) exceeds 10 in one million; or 2) ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than one (1) for the MEI.

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[1] California Environmental Protection Agency, 2002. Office of Environmental Health Hazard Assessment (OEHHA) and American Lung Association of California. Health Effects of Diesel Exhaust. April.
[2] Air Resources Board, 2005. Available online at: www.arb.ca.gov/toxics/harp/docs/userguide/appendixK.pdf (accessed April 13, 2018).
[3] California Office of Environmental Health Hazard Assessment, 2015

2.0 EMISSIONS ASSESSMENT

Air emissions associated with project construction were estimated using CalEEMod, version 2016.3.2. Emissions estimates used for the construction HRA were obtained from the CalEEMod output files prepared for the Home 2 Suites Hotel Project Air Quality Analysis (Stantec Consulting Services Inc. 2019). Detailed calculations are provided in Appendix A. Emissions used for this assessment are discussed in more detail below.

2.1 CONSTRUCTION EMISSIONS

During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions generated by demolition, excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include carbon monoxide (CO), oxides of nitrogen (NO_X), reactive organic gases (ROG), directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter. Emissions used for the construction HRA include DPM (represented as $PM_{2.5}$ exhaust) and $PM_{2.5}$ (exhaust $PM_{2.5}$ and fugitive $PM_{2.5}$ combined).

Construction activities associated with the proposed project include site clearing, grading, utility connections (e.g., new lateral connections to the existing water, sewer, and storm drain mains in East Akerly Drive), building construction, frontage improvements (e.g., new curb, gutter, sidewalk and driveway construction), and landscaping on the site. The following construction activities were assumed for the purposes of estimating emissions: demolition, site preparation, grading, building construction, paving, and architectural coating. Emissions generated during construction of the proposed project would be temporary and limited to the immediate area surrounding the construction site. Table 1 shows a summary of construction emissions by construction activity, while Table 2 shows the emissions by location (on-site or off-site).

Table 1 - Construction Emissions Summary by Construction Activity

Construction Emissions Summary		
	Tons per Year	
Construction Activity	DPM	Total $PM_{2.5}$
Site Preparation	0.00107	0.00136
Grading	0.00273	0.01286
Building Construction	0.10172	0.11820
Paving	0.00303	0.00319
Architectural Coating	0.00055	0.00068
Total Construction Emissions	**0.10910**	**0.13629**
Source: Appendix A.		

Table 2 - Construction Emissions Summary by Construction Activity

Construction Emissions Summary		
	Tons per Year	
Construction Activity	**DPM**	**Total $PM_{2.5}$**
On-site Emissions	0.10738	0.11771
Off-site Emissions	0.00172	0.01855
Total Construction Emissions	**0.1091**	**0.13626**
Source: Appendix A.		

3.0 CONSTRUCTION HEALTH RISK ASSESSMENT

The HRA evaluated DPM (represent as exhaust $PM_{2.5}$) and $PM_{2.5}$ (exhaust $PM_{2.5}$ and fugitive $PM_{2.5}$) emissions generated during construction of the proposed project and the related health risk impacts for sensitive receptors located within 1,000 feet of the project boundary. According to the BAAQMD, a project would result in a significant impact if it would individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, an increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per liter ($\mu g/m^3$).

The project site is located within 1,000 feet from existing sensitive receptors that could be exposed to diesel emission exhaust during the construction period. The nearest sensitive receptors are patients occupying the buildings that comprise the Kaiser Permanente Medical Center, the closest of which is located approximately 285 feet to the east of the project site. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source location to concentrations at the receptor locations of interest (i.e., receptors at a nearby hospital). The MEI was found to be located at the existing Kaiser Permanente Medical Center, at a building located approximately 470 feet northeast of the project site.

3.1 AIR DISPERSION MODELING

This assessment was conducted using CARB exposure methodology with the air dispersion modeling performed using the USEPA dispersion model AERMOD. An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the USEPA AERMOD (version 18081) air dispersion model, which is approved by the BAAQMD for air dispersion assessments. Specifically, the AERMOD model was used to estimate levels of air emissions at sensitive receptor locations from the project's construction DPM and $PM_{2.5}$ emissions. The use of the AERMOD model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data.

Terrain elevations were obtained for the project site using the AERMAP model, the AERMOD terrain data pre-processor. The air dispersion model assessment was performed using meteorological data from the Nut Tree Airport Station, which is located approximately 1.03 miles southwest of the project site.

Receptor locations within the AERMOD model were placed at locations of existing sensitive receptor sites within 1,000 feet of the project boundary. The z-coordinate (receptor breathing height) for placed receptors must be specified. To evaluate the project's localized construction impacts at the point of maximum impact, all receptors were placed within the breathing zone at zero meters above ground level. Impacts were also assed using 1.8 meters as the receptor breathing height. Results of both scenarios

are included in Appendix B, while the highest impacts for any age-based scenario were found using zero meters as the z-coordinate.

The on-site construction area sources were assumed to cover the entire construction area. The emissions from the on-site construction exhaust source were assumed to be emitted at a height of 5 meters above ground to account for the top of the equipment exhaust stack where the emissions are released to the atmosphere and the increase in the height of the emissions due to its heated exhaust. The off-site construction vehicle emissions were represented in the AERMOD model as line volume sources.

3.2 ESTIMATION OF CANCER RISKS

The BAAQMD has developed a set of guidelines for estimating cancer risks that provide adjustment factors including:

- Age-sensitivity weighting factors;
- Age-specific daily breathing rates; and
- Age-specific time-at-home factors.

The cancer risk adjustment factors used in this construction HRA are provided in Table 3 for infant, child, and adult sensitive receptors.

Table 3 - Inhalation Health Risks from Project Construction to Off-Site Receptors

Receptor Type	Exposure Frequency		Exposure Duration (years)	Age Sensitivity Factors	Time at Home Factor (%)	Daily Breathing Rate[1] (l/kg-day)
	Hours/day	Days/year				
Sensitive—Infant						
3rd Trimester	24	350	0.25	10	85	361
0–2 years	24	350	0.70	10	85	1,090
Sensitive Receptor—Child						
3–16 years	24	350	0.95	3	72	572
Sensitive Receptor—Adult						
> 16 to 30 years	24	350	0.95	1	73	261

Notes:
[1]The daily breathing rates recommended by the BAAQMD for sensitive/residential receptors assume the 95th percentile breathing rates for all individuals less than 2 years of age and 80th percentile breathing rates for all older individuals.
(l/kg-day) = liters per kilogram body weight per day
Source: BAAQMD 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en.

3.3 ESTIMATION OF NON-CANCER CHRONIC HAZARDS

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate reference exposure level (REL). Available RELs promulgated by OEHHA were considered in the assessment.

Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of the project's emissions to a concentration considered acceptable to public health professionals, termed the REL.

To calculate the HI, each chemical concentration or dose is divided by the appropriate toxicity REL. Where the total equals or exceeds one (1), a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM, for which the OEHHA has defined a REL for DPM of 5 $\mu g/m^3$. The principal toxicological endpoint assumed in this assessment was through inhalation.

3.4 ESTIMATION OF ANNUAL $PM_{2.5}$ CONCENTRATION

The BAAQMD's guidance also includes a significance threshold for $PM_{2.5}$ based on studies that show health impacts from exposure to this pollutant. The construction emissions of $PM_{2.5}$ incorporated into this assessment included DPM (as $PM_{2.5}$ exhaust) and fugitive dust.

3.5 PROJECT CONSTRUCTION TOXIC AIR POLLUTANTS—RESULTS

Results of the analysis are summarized and compared to the applicable thresholds in Table 4. Calculations and AERMOD output data used in the construction HRA are included in Appendix B.

Table 4 - Health Risks from Project Construction at the Maximally Exposed Individual

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks and Hazards at the MEI[1]			
Risks and Hazards at the MEI: Infants	3.064	0.006	0.031
Risks and Hazards at the MEI: Child	0.496	0.006	0.031
Risks and Hazards at the MEI: Adult	0.077	0.006	0.031
BAAQMD Significance Threshold	**10**	**1.0**	**0.3**
Exceeds Individual Source Threshold?	**No**	**No**	**No**

Notes:
MEI = maximally exposed individual
[1] The MEI is located at the existing Kaiser Permanente Medical Center, at a building located approximately 470 feet northeast of the project site.
[2] Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as $PM_{2.5}$ exhaust) by the REL of 5 $\mu g/m^3$.
Source: Appendix B.

As indicated in Table 4, construction of the project would not expose nearby sensitive receptors to substantial pollutant concentrations.

APPENDIX A

CalEEMod Results

Home 2 Suites - Solano-San Francisco County, Annual

Home 2 Suites

Solano-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	30.96	1000sqft	0.71	30,959.00	0
Parking Lot	135.00	Space	1.21	54,000.00	0
Hotel	107.00	Room	0.35	56,651.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - PD

Construction Phase -

Trips and VMT - Applicant assumes 15 workers maximum during peak construction period. 25 utilized for modeling to be conservative (50 trips).

Vehicle Trips - From Trip Gen Memo

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	30,960.00	30,959.00
tblLandUse	LandUseSquareFeet	155,364.00	56,651.00
tblLandUse	LotAcreage	3.57	0.35
tblTripsAndVMT	WorkerTripNumber	59.00	50.00
tblVehicleTrips	ST_TR	8.19	6.42
tblVehicleTrips	SU_TR	5.95	4.91
tblVehicleTrips	WD_TR	8.17	4.46
tblWater	IndoorWaterUseRate	2,714,244.39	7,689,600.00

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					
2020	0.6135	2.3809	1.9767	4.1300e-003	0.0838	0.1141	0.1979	0.0272	0.1091	0.1363	0.0000	356.0229	356.0229	0.0564	0.0000	357.4337
Maximum	**0.6135**	**2.3809**	**1.9767**	**4.1300e-003**	**0.0838**	**0.1141**	**0.1979**	**0.0272**	**0.1091**	**0.1363**	**0.0000**	**356.0229**	**356.0229**	**0.0564**	**0.0000**	**357.4337**

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					
2020	0.6135	2.3809	1.9767	4.1300e-003	0.0838	0.1141	0.1979	0.0272	0.1091	0.1363	0.0000	356.0226	356.0226	0.0564	0.0000	357.4334
Maximum	**0.6135**	**2.3809**	**1.9767**	**4.1300e-003**	**0.0838**	**0.1141**	**0.1979**	**0.0272**	**0.1091**	**0.1363**	**0.0000**	**356.0226**	**356.0226**	**0.0564**	**0.0000**	**357.4334**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-6-2020**	**4-5-2020**	0.7408	0.7408
2	**4-6-2020**	**7-5-2020**	0.7382	0.7382
3	**7-6-2020**	**9-30-2020**	0.7058	0.7058
		Highest	0.7408	0.7408

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/6/2020	1/8/2020	5	3	
2	Grading	Grading	1/9/2020	1/16/2020	5	6	
3	Building Construction	Building Construction	1/17/2020	11/19/2020	5	220	
4	Paving	Paving	11/20/2020	12/3/2020	5	10	
5	Architectural Coating	Architectural Coating	12/4/2020	12/17/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.92

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 84,977; Non-Residential Outdoor: 28,326; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	50.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	**2.4800e-003**	**0.0299**	**0.0169**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0700e-003**	**1.3300e-003**	**0.0000**	**3.2290**	**3.2290**	**1.0400e-003**	**0.0000**	**3.2551**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0867	0.0867	0.0000	0.0000	0.0867
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0867**	**0.0867**	**0.0000**	**0.0000**	**0.0867**

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	**2.4800e-003**	**0.0299**	**0.0169**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0700e-003**	**1.3300e-003**	**0.0000**	**3.2290**	**3.2290**	**1.0400e-003**	**0.0000**	**3.2551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0867	0.0867	0.0000	0.0000	0.0867
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0867**	**0.0867**	**0.0000**	**0.0000**	**0.0867**

3.3 Grading - 2020

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2167	0.2167	1.0000e-005	0.0000	0.2168
Total	**1.1000e-004**	**8.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2167**	**0.2167**	**1.0000e-005**	**0.0000**	**0.2168**

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2167	0.2167	1.0000e-005	0.0000	0.2168
Total	**1.1000e-004**	**8.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2167**	**0.2167**	**1.0000e-005**	**0.0000**	**0.2168**

3.4 Building Construction - 2020

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	0.2517	1.9177	1.6387	2.7500e-003		0.1043	0.1043		0.1000	0.1000	0.0000	228.4088	228.4088	0.0464	0.0000	229.5678
Total	**0.2517**	**1.9177**	**1.6387**	**2.7500e-003**		**0.1043**	**0.1043**		**0.1000**	**0.1000**	**0.0000**	**228.4088**	**228.4088**	**0.0464**	**0.0000**	**229.5678**

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	0.0000	0.0000
Vendor	0.0113	0.2885	0.0802	7.3000e-004	0.0167	1.5100e-003	0.0182	4.8200e-003	1.4400e-003	6.2700e-003	0.0000	68.9148	68.9148	3.6900e-003	0.0000	69.0070
Worker	0.0200	0.0141	0.1384	4.4000e-004	0.0437	3.0000e-004	0.0440	0.0116	2.8000e-004	0.0119	0.0000	39.7289	39.7289	9.9000e-004	0.0000	39.7538
Total	**0.0313**	**0.3025**	**0.2186**	**1.1700e-003**	**0.0604**	**1.8100e-003**	**0.0622**	**0.0164**	**1.7200e-003**	**0.0182**	**0.0000**	**108.6437**	**108.6437**	**4.6800e-003**	**0.0000**	**108.7608**

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	0.2517	1.9177	1.6387	2.7500e-003		0.1043	0.1043		0.1000	0.1000	0.0000	228.4086	228.4086	0.0464	0.0000	229.5675
Total	**0.2517**	**1.9177**	**1.6387**	**2.7500e-003**		**0.1043**	**0.1043**		**0.1000**	**0.1000**	**0.0000**	**228.4086**	**228.4086**	**0.0464**	**0.0000**	**229.5675**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0113	0.2885	0.0802	7.3000e-004	0.0167	1.5100e-003	0.0182	4.8200e-003	1.4400e-003	6.2700e-003	0.0000	68.9148	68.9148	3.6900e-003	0.0000	69.0070
Worker	0.0200	0.0141	0.1384	4.4000e-004	0.0437	3.0000e-004	0.0440	0.0116	2.8000e-004	0.0119	0.0000	39.7289	39.7289	9.9000e-004	0.0000	39.7538
Total	**0.0313**	**0.3025**	**0.2186**	**1.1700e-003**	**0.0604**	**1.8100e-003**	**0.0622**	**0.0164**	**1.7200e-003**	**0.0182**	**0.0000**	**108.6437**	**108.6437**	**4.6800e-003**	**0.0000**	**108.7608**

3.5 Paving - 2020

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	1.8900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5418	0.5418	1.0000e-005	0.0000	0.5421
Total	**2.7000e-004**	**1.9000e-004**	**1.8900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5418**	**0.5418**	**1.0000e-005**	**0.0000**	**0.5421**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	1.8900e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5418	0.5418	1.0000e-005	0.0000	0.5421
Total	**2.7000e-004**	**1.9000e-004**	**1.8900e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5418**	**0.5418**	**1.0000e-005**	**0.0000**	**0.5421**

3.6 Architectural Coating - 2020

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					
Archit. Coating	0.3131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.3143**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

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	0.0000	0.0000
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	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.5100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4334	0.4334	1.0000e-005	0.0000	0.4337
Total	**2.2000e-004**	**1.5000e-004**	**1.5100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4334**	**0.4334**	**1.0000e-005**	**0.0000**	**0.4337**

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					
Archit. Coating	0.3131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.3143**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.5100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4334	0.4334	1.0000e-005	0.0000	0.4337
Total	**2.2000e-004**	**1.5000e-004**	**1.5100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4334**	**0.4334**	**1.0000e-005**	**0.0000**	**0.4337**

APPENDIX B

Construction HRA Calculations and AERMOD Files

Vacaville Hotel Project

Estimation of Annual Onsite Construction Emissions

Start of Construction	1/6/2020
End of Construction	12/17/2020
Construction Hours per Day	8
Number of Construction Working Days	249
Number of Hours	1,992

Size of the construction area source (On-site): 9,119.9 sq-meters

Year	On-site Construction Activity	Unmitigated Onsite DPM (tons)	Unmitigated Onsite PM2.5 (tons)
2020	Site Preparation	0.00	0.00
2020	Grading	0.00	0.01
2020	Building Construction	0.10	0.10
2020	Paving	0.00	0.00
2020	Architectural Coating	0.00	0.00

Total Unmitigated DPM (On-site) 1.074E-01 tons

Average Emission 9.750E+04 grams
1.360E-02 grams/sec
1.491E-06 grams/m2-sec

Total Unmitigated PM2.5 (On-site) 1.177E-01 tons

Average Emission 1.069E+05 grams
1.490E-02 grams/sec
1.634E-06 grams/m2-sec

Vacaville Hotel Project

Estimation of Annual Offsite Construction DPM Emissions (No Mitigation)

Start of Construction	1/6/2020
End of Construction	12/17/2020
Construction Hours per Day	8
Number of Construction Working Days	249
Number of Hours	1,992

		2020	2020	2020	2020	2020
	Construction Trip Type	Site Preparation	Grading	Building Construction	Paving	Architectural Coating
DPM	Haul Truck	0.00000	0.00000	0.00000	0.00000	0.00000
DPM	Vendor Truck	0.00000	0.00000	0.00144	0.00000	0.00000
DPM	Worker	0.00000	0.00000	0.00028	0.00000	0.00000
DPM	Total	0.00000	0.00000	0.00172	0.00000	0.00000
PM2.5 Total	Haul Truck	0.00000	0.00000	0.00000	0.00000	0.00000
PM2.5 Total	Vendor Truck	0.00000	0.00000	0.00627	0.00000	0.00000
PM2.5 Total	Worker	0.00003	0.00006	0.01190	0.00016	0.00013
PM2.5 Total	Total	0.00003	0.00006	0.01820	0.00016	0.00013

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total DPM		0.000E+00	1.440E-03	2.800E-04	1.720E-03
Average Emissions	Grams	0.000E+00	1.308E+03	2.542E+02	
	Grams/sec	0.000E+00	1.823E-04	3.545E-05	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	
	Vehicle Travel Distances in the Construction HRA (miles)				
	Road Segment 1 (mi)	0.28	0.28	0.28	miles
	Trip Distribution (percent)				
	Road Segment 1	100%	100%	100%	
	Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
	Road Segment 1 (mi)	0.000E+00	6.869E-06	9.027E-07	7.771E-06

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total PM2.5 Total		0.000E+00	6.270E-03	1.228E-02	1.855E-02
Average Emissions	Grams	0.000E+00	5.693E+03	1.115E+04	
	Grams/sec	0.000E+00	7.939E-04	1.555E-03	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	
	Vehicle Travel Distances in the Construction HRA (miles)				
	Road Segment 1 (mi)	0.28	0.28	0.28	miles
	Trip Distribution (percent)				
	Road Segment 1	100%	100%	100%	
	Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
	Road Segment 1 (mi)	0.000E+00	2.991E-05	3.959E-05	6.950E-05

OEHHA Cancer/BAAQMD Risk Methodology

Cancer Risk = DPM x CPF x ASF x DBR x ED x EF x TAH x AF/ AT

Cancer Risk = probability of an individual contracting cancer out of a population of 1 million people over a lifetime exposure duration of 30 years

DPM = long-term average concentration of diesel PM as predicted by the air dispersion model (ug/m3)

CPF = cancer potency factor for DPM (mg.ke-day)

ASF = age sensitivity factors that are dependent on the age of the exposed individual (unitless)

DBR = daily breathing rates that are dependent on the age of the exposed individual (liters/kg-day)

ED = exposure duration (years)

EF = exposure frequency (days/year)

TAH = time at home factors that are dependent on the age of the exposed individual (%)

AT = averaging time over the lifetime of an individual (days)

AF = adjustment factor for workers and students (unitless)

Cancer Risk Equation Values as recommended by the California Office of Environmental Health Hazards Assessment

Cancer Risk Calculations Using OEHHA/BAAQMD Cancer Risk Assumptions
Vacaville Hotel Project
Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Infant
MIR UTM: 592570 4249420.28

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.028111366	10	361	0.85	0.25	0.3250
0-1	0.028111366	10	1090	0.85	0.70	2.7392
					Total	3.0641

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Child
MIR UTM: 592570 4249420.28

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.028111366	3	572	0.72	0.95	0.49612
					Total	0.49612

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Adult
MIR UTM: 592570 4249420.28

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.028111366	1	261	0.73	0.95	0.07651
					Total	0.07651

Vacaville Hotel Project

MIR UTM: 592570 4249420.28

Estimates of Chronic Non-Cancer Hazard Index (CNCHI)

Unmitigated

Chronic Non-Cancer Hazard Index at the Maximum Impacted Sensitive Receptor

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X (m)	Y (m)	Average DPM (ug/m3)	Max DPM (ug/m3)	CNCHI
592570	4249420.28	0.0281	0.0281	0.00562

Unmitigated

Annual PM2.5 Total (Exhaust + Fugitive Dust)

X (m)	Y (m)	Average PM2.5 Total (ug/m3)	Max PM2.5 (ug/m3)
592570	4249420.28	0.0310	0.0310

Vacaville Hotel Project

Construction Annual DPM Emissions (PM2.5 Exhaust) — **Unmitigated Concentrations**

		Maximum DPM (ug/m3)
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	1.49E-06	2.8111E-02
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	7.77E-06	

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite Road Segment 1 Annual DPM Exhaust w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
592570	4249420.28	18839.98665	3.1139	2.81E-02	2.42E-05	2.8111E-02
592579.14	4249424.89	16808.96339	2.72866	2.51E-02	2.12E-05	2.5080E-02
592581.72	4249433.38	16498.07471	2.69703	2.46E-02	2.10E-05	2.4617E-02
592581.73	4249409.48	15525.20844	2.47345	2.31E-02	1.92E-05	2.3165E-02
592588.96	4249440.34	15235.8384	2.46452	2.27E-02	1.92E-05	2.2733E-02
592586.25	4249418.08	15018.4623	2.37954	2.24E-02	1.85E-05	2.2408E-02
592589.25	4249431.54	14954.70908	2.38246	2.23E-02	1.85E-05	2.2313E-02
592582.91	4249403.37	14892.09488	2.36977	2.22E-02	1.84E-05	2.2220E-02
592596.78	4249451.2	14081.42199	2.26383	2.10E-02	1.76E-05	2.1011E-02
592594.71	4249425.16	13723.57608	2.14318	2.05E-02	1.67E-05	2.0476E-02
592598.11	4249443.43	13722.44372	2.16542	2.05E-02	1.68E-05	2.0475E-02
592597.23	4249435.3	13649.92464	2.13654	2.03E-02	1.66E-05	2.0366E-02
592592.45	4249412.51	13534.69865	2.11716	2.02E-02	1.65E-05	2.0194E-02
592588.31	4249393.04	13062.74884	2.08518	1.95E-02	1.62E-05	1.9491E-02
592605.23	4249458.28	12909.00724	2.03968	1.92E-02	1.59E-05	1.9261E-02
592600.8	4249428.3	12817.41421	1.97744	1.91E-02	1.54E-05	1.9124E-02
592605.45	4249445.01	12625.52116	1.95197	1.88E-02	1.52E-05	1.8838E-02
592600.9	4249419.59	12429.12237	1.91372	1.85E-02	1.49E-05	1.8545E-02
592609.26	4249435.38	11789.15992	1.78943	1.76E-02	1.39E-05	1.7590E-02
592609.98	4249527.8	11764.12102	2.28821	1.75E-02	1.78E-05	1.7556E-02
592601.11	4249406.32	11701.80387	1.81316	1.74E-02	1.41E-05	1.7459E-02
592613.9	4249452.09	11620.37752	1.76643	1.73E-02	1.37E-05	1.7338E-02
592616.72	4249466.53	11516.74	1.77122	1.72E-02	1.38E-05	1.7183E-02
592611.53	4249546.37	11145.63414	2.34061	1.66E-02	1.82E-05	1.6634E-02
592610.85	4249423.33	11100.34189	1.67688	1.65E-02	1.30E-05	1.6562E-02
592615.35	4249434.8	10936.50927	1.63673	1.63E-02	1.27E-05	1.6317E-02
592609.56	4249413.4	10819.63839	1.64653	1.61E-02	1.28E-05	1.6143E-02
592624.53	4249515.73	10715.1583	1.80521	1.60E-02	1.40E-05	1.5988E-02
592622.54	4249529.84	10690.17616	1.91864	1.59E-02	1.49E-05	1.5952E-02
592626.05	4249471.59	10520.72137	1.57931	1.57E-02	1.23E-05	1.5697E-02
592625.57	4249459.87	10377.37619	1.53703	1.55E-02	1.19E-05	1.5483E-02
592623.8	4249441.88	10123.05742	1.48909	1.51E-02	1.16E-05	1.5103E-02
592629.48	4249538.94	10021.22101	1.78282	1.49E-02	1.39E-05	1.4954E-02
592627.15	4249451.2	10003.37423	1.46531	1.49E-02	1.14E-05	1.4925E-02
592628.22	4249549.14	9930.70899	1.85617	1.48E-02	1.44E-05	1.4819E-02
592635.03	4249509.4	9854.68682	1.54611	1.47E-02	1.20E-05	1.4704E-02
592621.54	4249425.51	9810.37316	1.45279	1.46E-02	1.13E-05	1.4637E-02
592635.06	4249525.32	9770.18004	1.6052	1.46E-02	1.25E-05	1.4578E-02
592627.28	4249441.17	9704.49378	1.41657	1.45E-02	1.10E-05	1.4479E-02
592636.25	4249482.51	9629.86038	1.42105	1.44E-02	1.10E-05	1.4368E-02
592634.02	4249466.95	9621.29428	1.40114	1.43E-02	1.09E-05	1.4355E-02
592639.57	4249537.78	9329.00361	1.55948	1.39E-02	1.21E-05	1.3920E-02
592620.53	4249411.57	9319.0899	1.39906	1.39E-02	1.09E-05	1.3904E-02
592640.12	4249485.25	9306.10185	1.36191	1.39E-02	1.06E-05	1.3884E-02
592641.87	4249497.77	9256.76417	1.37625	1.38E-02	1.07E-05	1.3811E-02
592609.16	4249384.03	9166.69115	1.46583	1.37E-02	1.14E-05	1.3677E-02
592638.02	4249559.67	9131.88374	1.67086	1.36E-02	1.30E-05	1.3627E-02
592629.99	4249432.59	9122.96499	1.32664	1.36E-02	1.03E-05	1.3611E-02
592638.43	4249460.67	9064.19345	1.2984	1.35E-02	1.01E-05	1.3523E-02
592641.35	4249474.11	9046.26819	1.30031	1.35E-02	1.01E-05	1.3497E-02
592645.89	4249511.7	8983.7907	1.3553	1.34E-02	1.05E-05	1.3404E-02
592646.39	4249524.16	8938.15306	1.388	1.33E-02	1.08E-05	1.3336E-02
592647.73	4249550.69	8672.50892	1.45145	1.29E-02	1.13E-05	1.2940E-02
592648.57	4249492.33	8662.98124	1.24829	1.29E-02	9.70E-06	1.2925E-02
592617.61	4249391.11	8589.27062	1.34102	1.28E-02	1.04E-05	1.2816E-02
592651.24	4249500.1	8520.82312	1.23303	1.27E-02	9.58E-06	1.2713E-02
592649.81	4249481.19	8426.24778	1.19283	1.26E-02	9.27E-06	1.2571E-02
592641.66	4249446.25	8396.34821	1.19047	1.25E-02	9.25E-06	1.2527E-02
592652.08	4249489.1	8348.86414	1.18559	1.24E-02	9.21E-06	1.2456E-02
592649.79	4249474.19	8316.37874	1.16977	1.24E-02	9.09E-06	1.2407E-02
592636.28	4249425.38	8222.80915	1.18937	1.23E-02	9.24E-06	1.2268E-02
592657.03	4249538.94	8184.14685	1.26557	1.22E-02	9.84E-06	1.2211E-02
592657.96	4249522.23	8140.2989	1.20328	1.21E-02	9.35E-06	1.2145E-02
592536.28	4249274.16	8103.26335	2.43792	1.21E-02	1.89E-05	1.2100E-02

592613.19	4249374.13	8063.26399	1.32318	1.20E-02	1.03E-05	1.2031E-02
592659.51	4249508.91	7980.53645	1.14317	1.19E-02	8.88E-06	1.1906E-02
592659.51	4249494.37	7851.26452	1.10039	1.17E-02	8.55E-06	1.1713E-02
592650.12	4249453.33	7843.98092	1.09397	1.17E-02	8.50E-06	1.1703E-02
592626.42	4249393.69	7798.06156	1.20069	1.16E-02	9.33E-06	1.1635E-02
592658.27	4249481.06	7762.6158	1.0763	1.16E-02	8.36E-06	1.1581E-02
592621.64	4249381.21	7607.92372	1.21489	1.13E-02	9.44E-06	1.1352E-02
592656.21	4249464.21	7607.57396	1.04996	1.13E-02	8.16E-06	1.1350E-02
592666.62	4249530.04	7605.57928	1.11079	1.13E-02	8.63E-06	1.1347E-02
592650.08	4249442.47	7553.72265	1.05661	1.13E-02	8.21E-06	1.1270E-02
592667.96	4249501.45	7347.69693	1.01733	1.10E-02	7.91E-06	1.0962E-02
592665.5	4249487.11	7335.13909	1.0059	1.09E-02	7.82E-06	1.0943E-02
592670.65	4249512.01	7271.57706	1.01496	1.08E-02	7.89E-06	1.0849E-02
592664.66	4249471.29	7127.32599	0.97007	1.06E-02	7.54E-06	1.0633E-02
592536.95	4249264.35	7122.9814	2.24265	1.06E-02	1.74E-05	1.0637E-02
592623.09	4249372.58	6994.05184	1.14633	1.04E-02	8.91E-06	1.0436E-02
592677.77	4249519.75	6902.802	0.95768	1.03E-02	7.44E-06	1.0298E-02
592673.95	4249494.19	6878.26854	0.93243	1.03E-02	7.25E-06	1.0262E-02
592672	4249480.61	6799.9188	0.91664	1.01E-02	7.12E-06	1.0145E-02
592616.58	4249358.85	6787.95633	1.17523	1.01E-02	9.13E-06	1.0129E-02
592678.7	4249503.34	6700.72866	0.90767	9.99E-03	7.05E-06	9.9967E-03
592548	4249273.7	6670.41229	1.98276	9.94E-03	1.54E-05	9.9598E-03
592631.54	4249379.66	6635.64914	1.0566	9.89E-03	8.21E-06	9.9008E-03
592638.07	4249388.59	6527.5932	1.00752	9.73E-03	7.83E-06	9.7393E-03
592658.82	4249429	6482.10465	0.90605	9.66E-03	7.04E-06	9.6707E-03
592684.99	4249512.8	6440.87547	0.87053	9.60E-03	6.77E-06	9.6090E-03
592536.93	4249253.04	6412.77054	2.07755	9.56E-03	1.61E-05	9.5765E-03
592680.45	4249487.69	6391.31743	0.85203	9.53E-03	6.62E-06	9.5350E-03
592687.06	4249495.91	6133.12169	0.81267	9.14E-03	6.32E-06	9.1497E-03
592658.82	4249416.26	6077.79166	0.86539	9.06E-03	6.73E-06	9.0677E-03
592547.56	4249264.77	6060.72126	1.88478	9.04E-03	1.46E-05	9.0501E-03
592651.54	4249400.97	6039.18757	0.89286	9.00E-03	6.94E-06	9.0103E-03
592536.77	4249239.81	5932.58031	1.91309	8.84E-03	1.49E-05	8.8593E-03
592655.28	4249403.53	5879.60658	0.86126	8.77E-03	6.69E-06	8.7722E-03
592621.98	4249349.85	5841.74006	1.04798	8.71E-03	8.14E-06	8.7172E-03
592695.42	4249504.89	5808.53852	0.76416	8.66E-03	5.94E-06	8.6655E-03
592630.08	4249360.2	5789.17938	0.98872	8.63E-03	7.68E-06	8.6384E-03
592537.06	4249228.77	5697.30632	1.77941	8.49E-03	1.38E-05	8.5075E-03
592673.74	4249434.09	5665.22791	0.77404	8.45E-03	6.02E-06	8.4519E-03
592667.67	4249419.32	5611.69758	0.78785	8.37E-03	6.12E-06	8.3722E-03
592663.74	4249410.61	5581.14412	0.79913	8.32E-03	6.21E-06	8.3267E-03
592648.16	4249379.8	5447.6117	0.85566	8.12E-03	6.65E-06	8.1281E-03
592561.86	4249273.48	5445.81152	1.59798	8.12E-03	1.24E-05	8.1312E-03
592676.12	4249426.4	5325.2561	0.7334	7.94E-03	5.70E-06	7.9447E-03
592555.45	4249259.86	5152.30279	1.62278	7.68E-03	1.26E-05	7.6938E-03
592548.79	4249247.87	5139.02542	1.67119	7.66E-03	1.30E-05	7.6744E-03
592545.51	4249235.85	5064.08871	1.63733	7.55E-03	1.27E-05	7.5624E-03
592686.28	4249434.22	4989.88702	0.67366	7.44E-03	5.24E-06	7.4443E-03
592670.1	4249400.68	4914.03144	0.71517	7.33E-03	5.56E-06	7.3315E-03
592573.6	4249274.71	4731.64876	1.36322	7.05E-03	1.06E-05	7.0647E-03
592548.35	4249227.68	4719.79827	1.50381	7.04E-03	1.17E-05	7.0481E-03
592565.47	4249263.73	4676.31655	1.43748	6.97E-03	1.12E-05	6.9828E-03
592687.1	4249422.06	4656.89028	0.6399	6.94E-03	4.97E-06	6.9476E-03
592560.37	4249246.98	4344.45465	1.4117	6.48E-03	1.10E-05	6.4878E-03
592556.8	4249234.76	4266.14086	1.39137	6.36E-03	1.08E-05	6.3709E-03
592584.52	4249274.71	4140.01709	1.17997	6.17E-03	9.17E-06	6.1812E-03
592568.82	4249254.06	4108.5011	1.30701	6.13E-03	1.02E-05	6.1352E-03
592576.4	4249263.73	4080.26438	1.24165	6.08E-03	9.65E-06	6.0926E-03
592564.38	4249228.04	3749.26848	1.22082	5.59E-03	9.49E-06	5.5990E-03
592594.72	4249274.35	3669.57198	1.03667	5.47E-03	8.06E-06	5.4788E-03
592575.67	4249248.44	3621.25211	1.16512	5.40E-03	9.05E-06	5.4077E-03
592586.6	4249263.37	3611.21371	1.08954	5.38E-03	8.47E-06	5.3922E-03
592584.12	4249255.52	3467.76853	1.08403	5.17E-03	8.42E-06	5.1783E-03
592572.83	4249235.12	3461.70041	1.13577	5.16E-03	8.83E-06	5.1696E-03
592605.28	4249273.62	3250.84505	0.91078	4.85E-03	7.08E-06	4.8535E-03
592576.03	4249229.13	3243.92305	1.06451	4.84E-03	8.27E-06	4.8444E-03
592731.75	4249431.89	3230.92296	0.42621	4.82E-03	3.31E-06	4.8201E-03
592581.24	4249239.14	3198.39921	1.04453	4.77E-03	8.12E-06	4.7764E-03
592597.16	4249262.64	3196.30366	0.95643	4.77E-03	7.43E-06	4.7726E-03
592586.13	4249246.32	3164.50686	1.01638	4.72E-03	7.90E-06	4.7256E-03
592740.2	4249438.97	3109.24361	0.40474	4.64E-03	3.15E-06	4.6385E-03
592594.91	4249253.73	3038.14634	0.94593	4.53E-03	7.35E-06	4.5367E-03
592739.38	4249428.21	2972.42776	0.39344	4.43E-03	3.06E-06	4.4344E-03
592732.8	4249413.21	2908.70784	0.3967	4.34E-03	3.08E-06	4.3395E-03
592747.83	4249435.29	2867.07781	0.37437	4.27E-03	2.91E-06	4.2772E-03

592592.19	4249239.37	2836.34034	0.92075	4.23E-03	7.16E-06	4.2356E-03
592608.74	4249262.14	2825.68283	0.83552	4.21E-03	6.49E-06	4.2191E-03
592741.25	4249420.29	2811.26078	0.37711	4.19E-03	2.93E-06	4.1940E-03
592590.24	4249231.32	2779.37378	0.91182	4.14E-03	7.09E-06	4.1507E-03
592599.71	4249245.52	2724.10688	0.86662	4.06E-03	6.73E-06	4.0679E-03
592729.91	4249396.37	2713.02427	0.38493	4.04E-03	2.99E-06	4.0476E-03
592749.64	4249422.95	2659.15574	0.35418	3.96E-03	2.75E-06	3.9671E-03
592608.16	4249252.6	2632.1081	0.81061	3.92E-03	6.30E-06	3.9303E-03
592738.36	4249403.45	2631.29093	0.36588	3.92E-03	2.84E-06	3.9256E-03
592758.09	4249430.03	2572.54501	0.33788	3.84E-03	2.63E-06	3.8378E-03
592603.77	4249236.25	2472.78044	0.80039	3.69E-03	6.22E-06	3.6927E-03
592601.16	4249229.5	2455.89935	0.80327	3.66E-03	6.24E-06	3.6676E-03
592642.68	4249282.31	2452.05618	0.62193	3.66E-03	4.83E-06	3.6604E-03
592753.59	4249413.21	2450.37154	0.33219	3.65E-03	2.58E-06	3.6557E-03
592729.12	4249377.16	2431.64449	0.36418	3.63E-03	2.83E-06	3.6280E-03
592651.14	4249289.39	2420.97257	0.5831	3.61E-03	4.53E-06	3.6138E-03
592611.01	4249244.27	2415.91649	0.76213	3.60E-03	5.92E-06	3.6076E-03
592636.68	4249274.16	2408.49006	0.64421	3.59E-03	5.01E-06	3.5956E-03
592742.01	4249392.95	2406.20753	0.34285	3.59E-03	2.66E-06	3.5899E-03
592762.04	4249420.29	2376.90353	0.31728	3.54E-03	2.47E-06	3.5460E-03
592737.57	4249384.24	2369.7343	0.34627	3.53E-03	2.69E-06	3.5356E-03
592750.46	4249400.03	2340.38406	0.32684	3.49E-03	2.54E-06	3.4916E-03
592723.85	4249363.48	2325.18227	0.36529	3.47E-03	2.84E-06	3.4693E-03
592754.38	4249404.26	2322.03811	0.32081	3.46E-03	2.49E-06	3.4643E-03
592732.31	4249370.56	2272.30086	0.34694	3.39E-03	2.70E-06	3.3903E-03
592762.83	4249411.34	2257.01843	0.30655	3.36E-03	2.38E-06	3.3672E-03
592742.27	4249380.06	2225.31106	0.32848	3.32E-03	2.55E-06	3.3201E-03
592612.96	4249231.92	2210.71513	0.7151	3.30E-03	5.56E-06	3.3014E-03
592652.88	4249280.12	2198.74592	0.5556	3.28E-03	4.32E-06	3.2823E-03
592756.48	4249396.11	2184.61959	0.30748	3.26E-03	2.39E-06	3.2593E-03
592636.13	4249261.55	2178.77062	0.62097	3.25E-03	4.83E-06	3.2530E-03
592661.33	4249287.2	2173.2955	0.52176	3.24E-03	4.05E-06	3.2441E-03
592750.72	4249387.14	2171.2867	0.31325	3.24E-03	2.43E-06	3.2394E-03
592719.9	4249347.14	2147.83181	0.35966	3.20E-03	2.80E-06	3.2048E-03
592644.58	4249268.63	2143.93192	0.58269	3.20E-03	4.53E-06	3.2008E-03
592733.85	4249362.69	2133.71227	0.3342	3.18E-03	2.60E-06	3.1836E-03
592764.93	4249403.19	2127.89913	0.294	3.17E-03	2.28E-06	3.1746E-03
592728.35	4249354.22	2107.41464	0.34138	3.14E-03	2.65E-06	3.1444E-03
592742.3	4249369.77	2088.61984	0.31818	3.11E-03	2.47E-06	3.1162E-03
592725.36	4249343.13	1999.67818	0.33887	2.98E-03	2.63E-06	2.9838E-03
592656.52	4249271.75	1988.76258	0.52183	2.96E-03	4.06E-06	2.9690E-03
592664.98	4249278.83	1965.53594	0.49048	2.93E-03	3.81E-06	2.9341E-03
592733.81	4249350.21	1965.36555	0.32205	2.93E-03	2.50E-06	2.9325E-03
592633.21	4249242.25	1949.99864	0.60135	2.91E-03	4.67E-06	2.9118E-03
592745.17	4249361.38	1937.87857	0.30309	2.89E-03	2.36E-06	2.8914E-03
592753.62	4249368.46	1900.19453	0.28928	2.83E-03	2.25E-06	2.8351E-03
592641.67	4249249.33	1900.05095	0.56483	2.83E-03	4.39E-06	2.8370E-03
592646.33	4249254.27	1891.82513	0.54746	2.82E-03	4.25E-06	2.8246E-03
592654.78	4249261.35	1859.79113	0.51453	2.77E-03	4.00E-06	2.7766E-03
592723.18	4249328.56	1833.81436	0.33104	2.73E-03	2.57E-06	2.7365E-03
592731.63	4249335.64	1808.492	0.31448	2.70E-03	2.44E-06	2.6986E-03
592743.57	4249348.23	1801.17441	0.29555	2.69E-03	2.30E-06	2.6875E-03
592632.85	4249225.13	1789.26636	0.57305	2.67E-03	4.45E-06	2.6719E-03
592752.02	4249355.31	1771.45803	0.28199	2.64E-03	2.19E-06	2.6431E-03
592641.3	4249232.21	1722.09265	0.53896	2.57E-03	4.19E-06	2.5715E-03
592646.69	4249238.97	1709.1613	0.52165	2.55E-03	4.05E-06	2.5521E-03
592655.14	4249246.05	1667.72318	0.49075	2.49E-03	3.81E-06	2.4901E-03
592733.01	4249324.56	1655.93253	0.30153	2.47E-03	2.34E-06	2.4711E-03
592741.46	4249331.64	1635.91564	0.28703	2.44E-03	2.23E-06	2.4411E-03
592647.78	4249228.04	1600.71841	0.5008	2.39E-03	3.89E-06	2.3903E-03
592725.72	4249309.99	1572.53492	0.30805	2.34E-03	2.39E-06	2.3468E-03
592734.18	4249317.07	1557.03963	0.29275	2.32E-03	2.28E-06	2.3236E-03
592656.23	4249235.12	1551.4579	0.47151	2.31E-03	3.66E-06	2.3166E-03
592743.57	4249324.56	1534.84556	0.27696	2.29E-03	2.15E-06	2.2903E-03
592752.02	4249331.64	1517.5376	0.26421	2.26E-03	2.05E-06	2.2644E-03
592654.7	4249222.21	1476.86894	0.46238	2.20E-03	3.59E-06	2.2053E-03
592663.15	4249229.29	1428.74246	0.43575	2.13E-03	3.39E-06	2.1334E-03
592745.76	4249312.54	1391.1512	0.26396	2.07E-03	2.05E-06	2.0760E-03
592754.21	4249319.62	1378.7384	0.25188	2.06E-03	1.96E-06	2.0574E-03
CONCUNIT ug/	m^3					
DEPUNIT g/m^	2					

Vacaville Hotel Project

Construction Annual Total PM2.5 Emissions (PM2.5 Total) **Unmitigated Concentrations**

		Maximum PM2.5 Total (ug/m3)
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	1.63E-06	3.1006E-02
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	6.95E-05	

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual PM2.5 Total w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
592570	4249420.28	18839.98665	3.1139	3.08E-02	2.16E-04	3.1006E-02
592579.14	4249424.89	16808.96339	2.72866	2.75E-02	1.90E-04	2.7660E-02
592581.72	4249433.38	16498.07471	2.69703	2.70E-02	1.87E-04	2.7149E-02
592581.73	4249409.48	15525.20844	2.47345	2.54E-02	1.72E-04	2.5544E-02
592588.96	4249440.34	15235.8384	2.46452	2.49E-02	1.71E-04	2.5070E-02
592586.25	4249418.08	15018.4623	2.37954	2.45E-02	1.65E-04	2.4709E-02
592589.25	4249431.54	14954.70908	2.38246	2.44E-02	1.66E-04	2.4605E-02
592582.91	4249403.37	14892.09488	2.36977	2.43E-02	1.65E-04	2.4502E-02
592596.78	4249451.2	14081.42199	2.26383	2.30E-02	1.57E-04	2.3170E-02
592594.71	4249425.16	13723.57608	2.14318	2.24E-02	1.49E-04	2.2577E-02
592598.11	4249443.43	13722.44372	2.16542	2.24E-02	1.50E-04	2.2576E-02
592597.23	4249435.3	13649.92464	2.13654	2.23E-02	1.48E-04	2.2456E-02
592592.45	4249412.51	13534.69865	2.11716	2.21E-02	1.47E-04	2.2266E-02
592588.31	4249393.04	13062.74884	2.08518	2.13E-02	1.45E-04	2.1493E-02
592605.23	4249458.28	12909.00724	2.03968	2.11E-02	1.42E-04	2.1238E-02
592600.8	4249428.3	12817.41421	1.97744	2.09E-02	1.37E-04	2.1084E-02
592605.45	4249445.01	12625.52116	1.95197	2.06E-02	1.36E-04	2.0769E-02
592600.9	4249419.59	12429.12237	1.91372	2.03E-02	1.33E-04	2.0445E-02
592609.26	4249435.38	11789.15992	1.78943	1.93E-02	1.24E-04	1.9391E-02
592609.98	4249527.8	11764.12102	2.28821	1.92E-02	1.59E-04	1.9384E-02
592601.11	4249406.32	11701.80387	1.81316	1.91E-02	1.26E-04	1.9250E-02
592613.9	4249452.09	11620.37752	1.76643	1.90E-02	1.23E-04	1.9113E-02
592616.72	4249466.53	11516.74	1.77122	1.88E-02	1.23E-04	1.8944E-02
592611.53	4249546.37	11145.63414	2.34061	1.82E-02	1.63E-04	1.8377E-02
592610.85	4249423.33	11100.34189	1.67688	1.81E-02	1.17E-04	1.8257E-02
592615.35	4249434.8	10936.50927	1.63673	1.79E-02	1.14E-04	1.7987E-02
592609.56	4249413.4	10819.63839	1.64653	1.77E-02	1.14E-04	1.7796E-02
592624.53	4249515.73	10715.1583	1.80521	1.75E-02	1.25E-04	1.7637E-02
592622.54	4249529.84	10690.17616	1.91864	1.75E-02	1.33E-04	1.7604E-02
592626.05	4249471.59	10520.72137	1.57931	1.72E-02	1.10E-04	1.7303E-02
592625.57	4249459.87	10377.37619	1.53703	1.70E-02	1.07E-04	1.7066E-02
592623.8	4249441.88	10123.05742	1.48909	1.65E-02	1.03E-04	1.6647E-02
592629.48	4249538.94	10021.22101	1.78282	1.64E-02	1.24E-04	1.6501E-02
592627.15	4249451.2	10003.37423	1.46531	1.63E-02	1.02E-04	1.6450E-02
592628.22	4249549.14	9930.70899	1.85617	1.62E-02	1.29E-04	1.6358E-02
592635.03	4249509.4	9854.68682	1.54611	1.61E-02	1.07E-04	1.6212E-02
592621.54	4249425.51	9810.37316	1.45279	1.60E-02	1.01E-04	1.6134E-02
592635.06	4249525.32	9770.18004	1.6052	1.60E-02	1.12E-04	1.6078E-02
592627.28	4249441.17	9704.49378	1.41657	1.59E-02	9.84E-05	1.5958E-02
592636.25	4249482.51	9629.86038	1.42105	1.57E-02	9.88E-05	1.5836E-02
592634.02	4249466.95	9621.29428	1.40114	1.57E-02	9.74E-05	1.5821E-02
592639.57	4249537.78	9329.00361	1.55948	1.52E-02	1.08E-04	1.5354E-02
592620.53	4249411.57	9319.0899	1.39906	1.52E-02	9.72E-05	1.5327E-02
592640.12	4249485.25	9306.10185	1.36191	1.52E-02	9.47E-05	1.5303E-02
592641.87	4249497.77	9256.76417	1.37625	1.51E-02	9.56E-05	1.5223E-02
592609.16	4249384.03	9166.69115	1.46583	1.50E-02	1.02E-04	1.5082E-02
592638.02	4249559.67	9131.88374	1.67086	1.49E-02	1.16E-04	1.5040E-02
592629.99	4249432.59	9122.96499	1.32664	1.49E-02	9.22E-05	1.5001E-02
592638.43	4249460.67	9064.19345	1.2984	1.48E-02	9.02E-05	1.4903E-02
592641.35	4249474.11	9046.26819	1.30031	1.48E-02	9.04E-05	1.4874E-02
592645.89	4249511.7	8983.7907	1.3553	1.47E-02	9.42E-05	1.4776E-02
592646.39	4249524.16	8938.15306	1.388	1.46E-02	9.65E-05	1.4704E-02
592647.73	4249550.69	8672.50892	1.45145	1.42E-02	1.01E-04	1.4274E-02
592648.57	4249492.33	8662.98124	1.24829	1.42E-02	8.68E-05	1.4244E-02
592617.61	4249391.11	8589.27062	1.34102	1.40E-02	9.32E-05	1.4130E-02
592651.24	4249500.1	8520.82312	1.23303	1.39E-02	8.57E-05	1.4011E-02
592649.81	4249481.19	8426.24778	1.19283	1.38E-02	8.29E-05	1.3853E-02
592641.66	4249446.25	8396.34821	1.19047	1.37E-02	8.27E-05	1.3804E-02
592652.08	4249489.1	8348.86414	1.18559	1.36E-02	8.24E-05	1.3726E-02
592649.79	4249474.19	8316.37874	1.16977	1.36E-02	8.13E-05	1.3672E-02
592636.28	4249425.38	8222.80915	1.18937	1.34E-02	8.27E-05	1.3521E-02
592657.03	4249538.94	8184.14685	1.26557	1.34E-02	8.80E-05	1.3463E-02
592657.96	4249522.23	8140.2989	1.20328	1.33E-02	8.36E-05	1.3387E-02
592536.28	4249274.16	8103.26335	2.43792	1.32E-02	1.69E-04	1.3412E-02

592613.19	4249374.13	8063.26399	1.32318	1.32E-02	9.20E-05	1.3269E-02
592659.51	4249508.91	7980.53645	1.14317	1.30E-02	7.94E-05	1.3122E-02
592659.51	4249494.37	7851.26452	1.10039	1.28E-02	7.65E-05	1.2907E-02
592650.12	4249453.33	7843.98092	1.09397	1.28E-02	7.60E-05	1.2895E-02
592626.42	4249393.69	7798.06156	1.20069	1.27E-02	8.34E-05	1.2827E-02
592658.27	4249481.06	7762.6158	1.0763	1.27E-02	7.48E-05	1.2761E-02
592621.64	4249381.21	7607.92372	1.21489	1.24E-02	8.44E-05	1.2518E-02
592656.21	4249464.21	7607.57396	1.04996	1.24E-02	7.30E-05	1.2506E-02
592666.62	4249530.04	7605.57928	1.11079	1.24E-02	7.72E-05	1.2507E-02
592650.08	4249442.47	7553.72265	1.05661	1.23E-02	7.34E-05	1.2418E-02
592667.96	4249501.45	7347.69693	1.01733	1.20E-02	7.07E-05	1.2079E-02
592665.5	4249487.11	7335.13909	1.0059	1.20E-02	6.99E-05	1.2057E-02
592670.65	4249512.01	7271.57706	1.01496	1.19E-02	7.05E-05	1.1954E-02
592664.66	4249471.29	7127.32599	0.97007	1.16E-02	6.74E-05	1.1715E-02
592536.95	4249264.35	7122.9814	2.24265	1.16E-02	1.56E-04	1.1797E-02
592623.09	4249372.58	6994.05184	1.14633	1.14E-02	7.97E-05	1.1510E-02
592677.77	4249519.75	6902.802	0.95768	1.13E-02	6.66E-05	1.1347E-02
592673.95	4249494.19	6878.26854	0.93243	1.12E-02	6.48E-05	1.1306E-02
592672	4249480.61	6799.9188	0.91664	1.11E-02	6.37E-05	1.1176E-02
592616.58	4249358.85	6787.95633	1.17523	1.11E-02	8.17E-05	1.1175E-02
592678.7	4249503.34	6700.72866	0.90767	1.10E-02	6.31E-05	1.1014E-02
592548	4249273.7	6670.41229	1.98276	1.09E-02	1.38E-04	1.1039E-02
592631.54	4249379.66	6635.64914	1.0566	1.08E-02	7.34E-05	1.0918E-02
592638.07	4249388.59	6527.5932	1.00752	1.07E-02	7.00E-05	1.0738E-02
592658.82	4249429	6482.10465	0.90605	1.06E-02	6.30E-05	1.0656E-02
592684.99	4249512.8	6440.87547	0.87053	1.05E-02	6.05E-05	1.0586E-02
592536.93	4249253.04	6412.77054	2.07755	1.05E-02	1.44E-04	1.0624E-02
592680.45	4249487.69	6391.31743	0.85203	1.04E-02	5.92E-05	1.0504E-02
592687.06	4249495.91	6133.12169	0.81267	1.00E-02	5.65E-05	1.0080E-02
592658.82	4249416.26	6077.79166	0.86539	9.93E-03	6.01E-05	9.9927E-03
592547.56	4249264.77	6060.72126	1.88478	9.90E-03	1.31E-04	1.0036E-02
592651.54	4249400.97	6039.18757	0.89286	9.87E-03	6.21E-05	9.9316E-03
592536.77	4249239.81	5932.58031	1.91309	9.70E-03	1.33E-04	9.8282E-03
592655.28	4249403.53	5879.60658	0.86126	9.61E-03	5.99E-05	9.6686E-03
592621.98	4249349.85	5841.74006	1.04798	9.55E-03	7.28E-05	9.6197E-03
592695.42	4249504.89	5808.53852	0.76416	9.49E-03	5.31E-05	9.5457E-03
592630.08	4249360.2	5789.17938	0.98872	9.46E-03	6.87E-05	9.5297E-03
592537.06	4249228.77	5697.30632	1.77941	9.31E-03	1.24E-04	9.4345E-03
592673.74	4249434.09	5665.22791	0.77404	9.26E-03	5.38E-05	9.3122E-03
592667.67	4249419.32	5611.69758	0.78785	9.17E-03	5.48E-05	9.2256E-03
592663.74	4249410.61	5581.14412	0.79913	9.12E-03	5.55E-05	9.1765E-03
592648.16	4249379.8	5447.6117	0.85566	8.90E-03	5.95E-05	8.9622E-03
592561.86	4249273.48	5445.81152	1.59798	8.90E-03	1.11E-04	9.0108E-03
592676.12	4249426.4	5325.2561	0.7334	8.70E-03	5.10E-05	8.7537E-03
592555.45	4249259.86	5152.30279	1.62278	8.42E-03	1.13E-04	8.5329E-03
592548.79	4249247.87	5139.02542	1.67119	8.40E-03	1.16E-04	8.5146E-03
592545.51	4249235.85	5064.08871	1.63733	8.28E-03	1.14E-04	8.3898E-03
592686.28	4249434.22	4989.88702	0.67366	8.15E-03	4.68E-05	8.2015E-03
592670.1	4249400.68	4914.03144	0.71517	8.03E-03	4.97E-05	8.0804E-03
592573.6	4249274.71	4731.64876	1.36322	7.73E-03	9.47E-05	7.8274E-03
592548.35	4249227.68	4719.79827	1.50381	7.71E-03	1.05E-04	7.8178E-03
592565.47	4249263.73	4676.31655	1.43748	7.64E-03	9.99E-05	7.7422E-03
592687.1	4249422.06	4656.89028	0.6399	7.61E-03	4.45E-05	7.6550E-03
592560.37	4249246.98	4344.45465	1.4117	7.10E-03	9.81E-05	7.1980E-03
592556.8	4249234.76	4266.14086	1.39137	6.97E-03	9.67E-05	7.0686E-03
592584.52	4249274.71	4140.01709	1.17997	6.77E-03	8.20E-05	6.8478E-03
592568.82	4249254.06	4108.5011	1.30701	6.71E-03	9.08E-05	6.8051E-03
592576.4	4249263.73	4080.26438	1.24165	6.67E-03	8.63E-05	6.7544E-03
592564.38	4249228.04	3749.26848	1.22082	6.13E-03	8.48E-05	6.2121E-03
592594.72	4249274.35	3669.57198	1.03667	6.00E-03	7.20E-05	6.0690E-03
592575.67	4249248.44	3621.25211	1.16512	5.92E-03	8.10E-05	5.9990E-03
592586.6	4249263.37	3611.21371	1.08954	5.90E-03	7.57E-05	5.9773E-03
592584.12	4249255.52	3467.76853	1.08403	5.67E-03	7.53E-05	5.7425E-03
592572.83	4249235.12	3461.70041	1.13577	5.66E-03	7.89E-05	5.7362E-03
592605.28	4249273.62	3250.84505	0.91078	5.31E-03	6.33E-05	5.3760E-03
592576.03	4249229.13	3243.92305	1.06451	5.30E-03	7.40E-05	5.3753E-03
592731.75	4249431.89	3230.92296	0.42621	5.28E-03	2.96E-05	5.3097E-03
592581.24	4249239.14	3198.39921	1.04453	5.23E-03	7.26E-05	5.2996E-03
592597.16	4249262.64	3196.30366	0.95643	5.22E-03	6.65E-05	5.2900E-03
592586.13	4249246.32	3164.50686	1.01638	5.17E-03	7.06E-05	5.2422E-03
592740.2	4249438.97	3109.24361	0.40474	5.08E-03	2.81E-05	5.1094E-03
592594.91	4249253.73	3038.14634	0.94593	4.97E-03	6.57E-05	5.0308E-03
592739.38	4249428.21	2972.42776	0.39344	4.86E-03	2.73E-05	4.8850E-03
592732.8	4249413.21	2908.70784	0.3967	4.75E-03	2.76E-05	4.7811E-03
592747.83	4249435.29	2867.07781	0.37437	4.69E-03	2.60E-05	4.7115E-03

592592.19	4249239.37	2836.34034	0.92075	4.64E-03	6.40E-05	4.6993E-03
592608.74	4249262.14	2825.68283	0.83552	4.62E-03	5.81E-05	4.6759E-03
592741.25	4249420.29	2811.26078	0.37711	4.59E-03	2.62E-05	4.6205E-03
592590.24	4249231.32	2779.37378	0.91182	4.54E-03	6.34E-05	4.6055E-03
592599.71	4249245.52	2724.10688	0.86662	4.45E-03	6.02E-05	4.5121E-03
592729.91	4249396.37	2713.02427	0.38493	4.43E-03	2.68E-05	4.4605E-03
592749.64	4249422.95	2659.15574	0.35418	4.35E-03	2.46E-05	4.3703E-03
592608.16	4249252.6	2632.1081	0.81061	4.30E-03	5.63E-05	4.3578E-03
592738.36	4249403.45	2631.29093	0.36588	4.30E-03	2.54E-05	4.3256E-03
592758.09	4249430.03	2572.54501	0.33788	4.20E-03	2.35E-05	4.2277E-03
592603.77	4249236.25	2472.78044	0.80039	4.04E-03	5.56E-05	4.0968E-03
592601.16	4249229.5	2455.89935	0.80327	4.01E-03	5.58E-05	4.0694E-03
592642.68	4249282.31	2452.05618	0.62193	4.01E-03	4.32E-05	4.0505E-03
592753.59	4249413.21	2450.37154	0.33219	4.00E-03	2.31E-05	4.0276E-03
592729.12	4249377.16	2431.64449	0.36418	3.97E-03	2.53E-05	3.9992E-03
592651.14	4249289.39	2420.97257	0.5831	3.96E-03	4.05E-05	3.9970E-03
592611.01	4249244.27	2415.91649	0.76213	3.95E-03	5.30E-05	4.0012E-03
592636.68	4249274.16	2408.49006	0.64421	3.94E-03	4.48E-05	3.9808E-03
592742.01	4249392.95	2406.20753	0.34285	3.93E-03	2.38E-05	3.9562E-03
592762.04	4249420.29	2376.90353	0.31728	3.88E-03	2.21E-05	3.9065E-03
592737.57	4249384.24	2369.7343	0.34627	3.87E-03	2.41E-05	3.8968E-03
592750.46	4249400.03	2340.38406	0.32684	3.82E-03	2.27E-05	3.8475E-03
592723.85	4249363.48	2325.18227	0.36529	3.80E-03	2.54E-05	3.8253E-03
592754.38	4249404.26	2322.03811	0.32081	3.79E-03	2.23E-05	3.8171E-03
592732.31	4249370.56	2272.30086	0.34694	3.71E-03	2.41E-05	3.7376E-03
592762.83	4249411.34	2257.01843	0.30655	3.69E-03	2.13E-05	3.7098E-03
592742.27	4249380.06	2225.31106	0.32848	3.64E-03	2.28E-05	3.6595E-03
592612.96	4249231.92	2210.71513	0.7151	3.61E-03	4.97E-05	3.6625E-03
592652.88	4249280.12	2198.74592	0.5556	3.59E-03	3.86E-05	3.6319E-03
592756.48	4249396.11	2184.61959	0.30748	3.57E-03	2.14E-05	3.5916E-03
592636.13	4249261.55	2178.77062	0.62097	3.56E-03	4.32E-05	3.6038E-03
592661.33	4249287.2	2173.2955	0.52176	3.55E-03	3.63E-05	3.5880E-03
592750.72	4249387.14	2171.2867	0.31325	3.55E-03	2.18E-05	3.5702E-03
592719.9	4249347.14	2147.83181	0.35966	3.51E-03	2.50E-05	3.5351E-03
592644.58	4249268.63	2143.93192	0.58269	3.50E-03	4.05E-05	3.5442E-03
592733.85	4249362.69	2133.71227	0.3342	3.49E-03	2.32E-05	3.5102E-03
592764.93	4249403.19	2127.89913	0.294	3.48E-03	2.04E-05	3.4979E-03
592728.35	4249354.22	2107.41464	0.34138	3.44E-03	2.37E-05	3.4678E-03
592742.3	4249369.77	2088.61984	0.31818	3.41E-03	2.21E-05	3.4354E-03
592725.36	4249343.13	1999.67818	0.33887	3.27E-03	2.36E-05	3.2915E-03
592656.52	4249271.75	1988.76258	0.52183	3.25E-03	3.63E-05	3.2864E-03
592664.98	4249278.83	1965.53594	0.49048	3.21E-03	3.41E-05	3.2463E-03
592733.81	4249350.21	1965.36555	0.32205	3.21E-03	2.24E-05	3.2343E-03
592633.21	4249242.25	1949.99864	0.60135	3.19E-03	4.18E-05	3.2286E-03
592745.17	4249361.38	1937.87857	0.30309	3.17E-03	2.11E-05	3.1880E-03
592753.62	4249368.46	1900.19453	0.28928	3.11E-03	2.01E-05	3.1255E-03
592641.67	4249249.33	1900.05095	0.56483	3.11E-03	3.93E-05	3.1444E-03
592646.33	4249254.27	1891.82513	0.54746	3.09E-03	3.80E-05	3.1298E-03
592654.78	4249261.35	1859.79113	0.51453	3.04E-03	3.58E-05	3.0751E-03
592723.18	4249328.56	1833.81436	0.33104	3.00E-03	2.30E-05	3.0199E-03
592731.63	4249335.64	1808.492	0.31448	2.96E-03	2.19E-05	2.9774E-03
592743.57	4249348.23	1801.17441	0.29555	2.94E-03	2.05E-05	2.9641E-03
592632.85	4249225.13	1789.26636	0.57305	2.92E-03	3.98E-05	2.9639E-03
592752.02	4249355.31	1771.45803	0.28199	2.89E-03	1.96E-05	2.9146E-03
592641.3	4249232.21	1722.09265	0.53896	2.81E-03	3.75E-05	2.8518E-03
592646.69	4249238.97	1709.1613	0.52165	2.79E-03	3.63E-05	2.8294E-03
592655.14	4249246.05	1667.72318	0.49075	2.73E-03	3.41E-05	2.7596E-03
592733.01	4249324.56	1655.93253	0.30153	2.71E-03	2.10E-05	2.7272E-03
592741.46	4249331.64	1635.91564	0.28703	2.67E-03	1.99E-05	2.6934E-03
592647.78	4249228.04	1600.71841	0.5008	2.62E-03	3.48E-05	2.6508E-03
592725.72	4249309.99	1572.53492	0.30805	2.57E-03	2.14E-05	2.5913E-03
592734.18	4249317.07	1557.03963	0.29275	2.54E-03	2.03E-05	2.5649E-03
592656.23	4249235.12	1551.4579	0.47151	2.54E-03	3.28E-05	2.5682E-03
592743.57	4249324.56	1534.84556	0.27696	2.51E-03	1.92E-05	2.5276E-03
592752.02	4249331.64	1517.5376	0.26421	2.48E-03	1.84E-05	2.4984E-03
592654.7	4249222.21	1476.86894	0.46238	2.41E-03	3.21E-05	2.4457E-03
592663.15	4249229.29	1428.74246	0.43575	2.33E-03	3.03E-05	2.3652E-03
592745.76	4249312.54	1391.1512	0.26396	2.27E-03	1.83E-05	2.2918E-03
592754.21	4249319.62	1378.7384	0.25188	2.25E-03	1.75E-05	2.2707E-03
CONCUNIT ug/	m^3					
DEPUNIT g/m^	2					

* AERMOD (1808	1): G:\Other\J	JM\0001.0002 V	acaville\	Vacaville_	\082519.	isc		08/27/	19
* AERMET (1413	4):							10:24	25
* MODELING OPTI	ONS USED: Re	gDFAULT CONC	ELEV UR	BAN					
* PLOT	FILE OF ANNUAL	VALUES AVERAG	ED ACROSS	5 YEARS	FOR SOU	RCE GROU	P: AREA		
* FOR A	TOTAL OF 20	8 RECEPTORS.							
* FORMA	T: (3(1X,F13.5	),3(1X,F8.2),2	X,A6,2X,A	8,2X,I8.8,	2X,A8)				
* X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID
592638.02	4249559.67	9131.88374	27.59	27.59	0	ANNUAL	AREA	5	
592628.22	4249549.14	9930.70899	27.59	27.59	0	ANNUAL	AREA	5	
592647.73	4249550.69	8672.50892	27.58	27.58	0	ANNUAL	AREA	5	
592639.57	4249537.78	9329.00361	27.55	27.55	0	ANNUAL	AREA	5	
592622.54	4249529.84	10690.17616	27.59	27.59	0	ANNUAL	AREA	5	
592635.03	4249509.4	9854.68682	27.49	27.49	0	ANNUAL	AREA	5	
592646.39	4249524.16	8938.15306	27.49	27.49	0	ANNUAL	AREA	5	
592666.62	4249530.04	7605.57928	27.49	27.49	0	ANNUAL	AREA	5	
592684.99	4249512.8	6440.87547	27.38	27.38	0	ANNUAL	AREA	5	
592667.96	4249501.45	7347.69693	27.39	27.39	0	ANNUAL	AREA	5	
592651.24	4249500.1	8520.82312	27.4	27.4	0	ANNUAL	AREA	5	
592649.79	4249474.19	8316.37874	27.4	27.4	0	ANNUAL	AREA	5	
592636.25	4249482.51	9629.86038	27.39	27.39	0	ANNUAL	AREA	5	
592626.05	4249471.59	10520.72137	27.39	27.39	0	ANNUAL	AREA	5	
592638.43	4249460.67	9064.19345	27.37	27.37	0	ANNUAL	AREA	5	
592627.15	4249451.2	10003.37423	27.38	27.38	0	ANNUAL	AREA	5	
592650.08	4249442.47	7553.72265	27.29	27.29	0	ANNUAL	AREA	5	
592673.74	4249434.09	5665.22791	27.21	27.21	0	ANNUAL	AREA	5	
592658.82	4249416.26	6077.79166	27.2	27.2	0	ANNUAL	AREA	5	
592658.82	4249429	6482.10465	27.27	27.27	0	ANNUAL	AREA	5	
592651.54	4249400.97	6039.18757	27.19	27.19	0	ANNUAL	AREA	5	
592638.07	4249388.59	6527.5932	27.19	27.19	0	ANNUAL	AREA	5	
592626.42	4249393.69	7798.06156	27.2	27.2	0	ANNUAL	AREA	5	
592609.98	4249527.8	11764.12102	27.6	27.6	0	ANNUAL	AREA	5	
592611.53	4249546.37	11145.63414	27.6	27.6	0	ANNUAL	AREA	5	
592657.03	4249538.94	8184.14685	27.49	27.49	0	ANNUAL	AREA	5	
592635.06	4249525.32	9770.18004	27.51	27.51	0	ANNUAL	AREA	5	
592624.53	4249515.73	10715.1583	27.51	27.51	0	ANNUAL	AREA	5	
592641.87	4249497.77	9256.76417	27.44	27.44	0	ANNUAL	AREA	5	
592645.89	4249511.7	8983.7907	27.48	27.48	0	ANNUAL	AREA	5	
592657.96	4249522.23	8140.2989	27.49	27.49	0	ANNUAL	AREA	5	
592659.51	4249508.91	7980.53645	27.44	27.44	0	ANNUAL	AREA	5	
592677.77	4249519.75	6902.802	27.45	27.45	0	ANNUAL	AREA	5	
592629.48	4249538.94	10021.22101	27.59	27.59	0	ANNUAL	AREA	5	
592670.65	4249512.01	7271.57706	27.41	27.41	0	ANNUAL	AREA	5	
592695.42	4249504.89	5808.53852	27.38	27.38	0	ANNUAL	AREA	5	
592678.7	4249503.34	6700.72866	27.39	27.39	0	ANNUAL	AREA	5	
592687.06	4249495.91	6133.12169	27.35	27.35	0	ANNUAL	AREA	5	
592659.51	4249494.37	7851.26452	27.39	27.39	0	ANNUAL	AREA	5	
592652.08	4249489.1	8348.86414	27.39	27.39	0	ANNUAL	AREA	5	
592658.27	4249481.06	7762.6158	27.38	27.38	0	ANNUAL	AREA	5	
592673.95	4249494.19	6878.26854	27.4	27.4	0	ANNUAL	AREA	5	
592665.5	4249487.11	7335.13909	27.38	27.38	0	ANNUAL	AREA	5	
592680.45	4249487.69	6391.31743	27.35	27.35	0	ANNUAL	AREA	5	
592672	4249480.61	6799.9188	27.35	27.35	0	ANNUAL	AREA	5	
592664.66	4249471.29	7127.32599	27.29	27.29	0	ANNUAL	AREA	5	
592656.21	4249464.21	7607.57396	27.34	27.34	0	ANNUAL	AREA	5	
592648.57	4249492.33	8662.98124	27.39	27.39	0	ANNUAL	AREA	5	
592640.12	4249485.25	9306.10185	27.4	27.4	0	ANNUAL	AREA	5	
592649.81	4249481.19	8426.24778	27.4	27.4	0	ANNUAL	AREA	5	
592641.35	4249474.11	9046.26819	27.4	27.4	0	ANNUAL	AREA	5	
592613.9	4249452.09	11620.37752	27.4	27.4	0	ANNUAL	AREA	5	
592605.45	4249445.01	12625.52116	27.39	27.39	0	ANNUAL	AREA	5	
592634.02	4249466.95	9621.29428	27.39	27.39	0	ANNUAL	AREA	5	
592625.57	4249459.87	10377.37619	27.4	27.4	0	ANNUAL	AREA	5	
592605.23	4249458.28	12909.00724	27.39	27.39	0	ANNUAL	AREA	5	
592596.78	4249451.2	14081.42199	27.39	27.39	0	ANNUAL	AREA	5	
592623.8	4249441.88	10123.05742	27.34	27.34	0	ANNUAL	AREA	5	
592615.35	4249434.8	10936.50927	27.32	27.32	0	ANNUAL	AREA	5	
592650.12	4249453.33	7843.98092	27.3	27.3	0	ANNUAL	AREA	5	
592641.66	4249446.25	8396.34821	27.29	27.29	0	ANNUAL	AREA	5	
592629.99	4249432.59	9122.96499	27.29	27.29	0	ANNUAL	AREA	5	
592621.54	4249425.51	9810.37316	27.29	27.29	0	ANNUAL	AREA	5	
592609.56	4249413.4	10819.63839	27.29	27.29	0	ANNUAL	AREA	5	
592601.11	4249406.32	11701.80387	27.29	27.29	0	ANNUAL	AREA	5	
592600.9	4249419.59	12429.12237	27.3	27.3	0	ANNUAL	AREA	5	
592592.45	4249412.51	13534.69865	27.3	27.3	0	ANNUAL	AREA	5	
592594.71	4249425.16	13723.57608	27.36	27.36	0	ANNUAL	AREA	5	
592586.25	4249418.08	15018.4623	27.33	27.33	0	ANNUAL	AREA	5	
592581.72	4249433.38	16498.07471	27.4	27.4	0	ANNUAL	AREA	5	
592579.14	4249424.89	16808.96339	27.38	27.38	0	ANNUAL	AREA	5	
592598.11	4249443.43	13722.44372	27.4	27.4	0	ANNUAL	AREA	5	
592588.96	4249440.34	15235.8384	27.39	27.39	0	ANNUAL	AREA	5	
592609.26	4249435.38	11789.15992	27.34	27.34	0	ANNUAL	AREA	5	
592600.8	4249428.3	12817.41421	27.35	27.35	0	ANNUAL	AREA	5	
592676.12	4249426.4	5325.2561	27.19	27.19	0	ANNUAL	AREA	5	
592667.67	4249419.32	5611.69758	27.19	27.19	0	ANNUAL	AREA	5	
592663.74	4249410.61	5581.14412	27.19	27.19	0	ANNUAL	AREA	5	
592655.28	4249403.53	5879.60658	27.19	27.19	0	ANNUAL	AREA	5	
592631.54	4249379.66	6635.64914	27.2	27.2	0	ANNUAL	AREA	5	
592623.09	4249372.58	6994.05184	27.2	27.2	0	ANNUAL	AREA	5	
592621.64	4249381.21	7607.92372	27.19	27.19	0	ANNUAL	AREA	5	
592613.19	4249374.13	8063.26399	27.19	27.19	0	ANNUAL	AREA	5	
592617.61	4249391.11	8589.27062	27.22	27.22	0	ANNUAL	AREA	5	
592609.16	4249384.03	9166.69115	27.21	27.21	0	ANNUAL	AREA	5	
592740.2	4249438.97	3109.24361	27.16	27.16	0	ANNUAL	AREA	5	
592731.75	4249431.89	3230.92296	27.18	27.18	0	ANNUAL	AREA	5	
592747.83	4249435.29	2867.07781	27.14	27.14	0	ANNUAL	AREA	5	
592739.38	4249428.21	2972.42776	27.13	27.13	0	ANNUAL	AREA	5	
592758.09	4249430.03	2572.54501	27.12	27.12	0	ANNUAL	AREA	5	
592749.64	4249422.95	2659.15574	27.1	27.1	0	ANNUAL	AREA	5	
592762.04	4249420.29	2376.90353	27.09	27.09	0	ANNUAL	AREA	5	
592753.59	4249413.21	2450.37154	27.09	27.09	0	ANNUAL	AREA	5	
592741.25	4249420.29	2811.26078	27.12	27.12	0	ANNUAL	AREA	5	
592732.8	4249413.21	2908.70784	27.1	27.1	0	ANNUAL	AREA	5	
592738.36	4249403.45	2631.29093	27.09	27.09	0	ANNUAL	AREA	5	
592729.91	4249396.37	2713.02427	27.09	27.09	0	ANNUAL	AREA	5	
592750.46	4249400.03	2340.38406	27.09	27.09	0	ANNUAL	AREA	5	
592742.01	4249392.95	2406.20753	27.09	27.09	0	ANNUAL	AREA	5	
592764.93	4249403.19	2127.89913	27.09	27.09	0	ANNUAL	AREA	5	
592756.48	4249396.11	2184.61959	27.09	27.09	0	ANNUAL	AREA	5	
592762.83	4249411.34	2257.01843	27.09	27.09	0	ANNUAL	AREA	5	
592754.38	4249404.26	2322.03811	27.09	27.09	0	ANNUAL	AREA	5	
592750.72	4249387.14	2171.2867	27.08	27.08	0	ANNUAL	AREA	5	
592742.27	4249380.06	2225.31106	27.04	27.04	0	ANNUAL	AREA	5	
592737.57	4249384.24	2369.7343	27.06	27.06	0	ANNUAL	AREA	5	
592729.12	4249377.16	2431.64449	27.06	27.06	0	ANNUAL	AREA	5	
592732.31	4249370.56	2272.30086	27.02	27.02	0	ANNUAL	AREA	5	
592723.85	4249363.48	2325.18227	27.05	27.05	0	ANNUAL	AREA	5	
592742.3	4249369.77	2088.61984	26.99	26.99	0	ANNUAL	AREA	5	
592733.85	4249362.69	2133.71227	27	27	0	ANNUAL	AREA	5	
592753.62	4249368.46	1900.19453	26.99	26.99	0	ANNUAL	AREA	5	
592745.17	4249361.38	1937.87857	26.99	26.99	0	ANNUAL	AREA	5	

* AERMOD (1808	1): G:\Other\J	JM\0001.0002 V	acaville\	Vacaville_	\082519.	isc		08/27/	19
* AERMET (1413	4):							10:24	25
* MODELING OPTI	ONS USED: Re	gDFAULT CONC	ELEV UR	BAN					
* PLOT	FILE OF ANNUAL	VALUES AVERAG	ED ACROSS	5 YEARS	FOR SOU	RCE GROU	P: LINE		
* FOR A	TOTAL OF 20	8 RECEPTORS.							
* FORMA	T: (3(1X,F13.5	),3(1X,F8.2),2	X,A6,2X,A	8,2X,I8.8,	2X,A8)				
* X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID
592638.02	4249559.67	1.67086	27.59	27.59	0	ANNUAL	LINE	5	
592628.22	4249549.14	1.85617	27.59	27.59	0	ANNUAL	LINE	5	
592647.73	4249550.69	1.45145	27.58	27.58	0	ANNUAL	LINE	5	
592639.57	4249537.78	1.55948	27.55	27.55	0	ANNUAL	LINE	5	
592622.54	4249529.84	1.91864	27.59	27.59	0	ANNUAL	LINE	5	
592635.03	4249509.4	1.54611	27.49	27.49	0	ANNUAL	LINE	5	
592646.39	4249524.16	1.388	27.49	27.49	0	ANNUAL	LINE	5	
592666.62	4249530.04	1.11079	27.49	27.49	0	ANNUAL	LINE	5	
592684.99	4249512.8	0.87053	27.38	27.38	0	ANNUAL	LINE	5	
592667.96	4249501.45	1.01733	27.39	27.39	0	ANNUAL	LINE	5	
592651.24	4249500.1	1.23303	27.4	27.4	0	ANNUAL	LINE	5	
592649.79	4249474.19	1.16977	27.4	27.4	0	ANNUAL	LINE	5	
592636.25	4249482.51	1.42105	27.39	27.39	0	ANNUAL	LINE	5	
592626.05	4249471.59	1.57931	27.39	27.39	0	ANNUAL	LINE	5	
592638.43	4249460.67	1.2984	27.37	27.37	0	ANNUAL	LINE	5	
592627.15	4249451.2	1.46531	27.38	27.38	0	ANNUAL	LINE	5	
592650.08	4249442.47	1.05661	27.29	27.29	0	ANNUAL	LINE	5	
592673.74	4249434.09	0.77404	27.21	27.21	0	ANNUAL	LINE	5	
592658.82	4249416.26	0.86539	27.2	27.2	0	ANNUAL	LINE	5	
592658.82	4249429	0.90605	27.27	27.27	0	ANNUAL	LINE	5	
592651.54	4249400.97	0.89286	27.19	27.19	0	ANNUAL	LINE	5	
592638.07	4249388.59	1.00752	27.19	27.19	0	ANNUAL	LINE	5	
592626.42	4249393.69	1.20069	27.2	27.2	0	ANNUAL	LINE	5	
592609.98	4249527.8	2.28821	27.6	27.6	0	ANNUAL	LINE	5	
592611.53	4249546.37	2.34061	27.6	27.6	0	ANNUAL	LINE	5	
592657.03	4249538.94	1.26557	27.49	27.49	0	ANNUAL	LINE	5	
592635.06	4249525.32	1.6052	27.51	27.51	0	ANNUAL	LINE	5	
592624.53	4249515.73	1.80521	27.51	27.51	0	ANNUAL	LINE	5	
592641.87	4249497.77	1.37625	27.44	27.44	0	ANNUAL	LINE	5	
592645.89	4249511.7	1.3553	27.48	27.48	0	ANNUAL	LINE	5	
592657.96	4249522.23	1.20328	27.49	27.49	0	ANNUAL	LINE	5	
592659.51	4249508.91	1.14317	27.44	27.44	0	ANNUAL	LINE	5	
592677.77	4249519.75	0.95768	27.45	27.45	0	ANNUAL	LINE	5	
592629.48	4249538.94	1.78282	27.59	27.59	0	ANNUAL	LINE	5	
592670.65	4249512.01	1.01496	27.41	27.41	0	ANNUAL	LINE	5	
592695.42	4249504.89	0.76416	27.38	27.38	0	ANNUAL	LINE	5	
592678.7	4249503.34	0.90767	27.39	27.39	0	ANNUAL	LINE	5	
592687.06	4249495.91	0.81267	27.35	27.35	0	ANNUAL	LINE	5	
592659.51	4249494.37	1.10039	27.39	27.39	0	ANNUAL	LINE	5	
592652.08	4249489.1	1.18559	27.39	27.39	0	ANNUAL	LINE	5	
592658.27	4249481.06	1.0763	27.38	27.38	0	ANNUAL	LINE	5	
592673.95	4249494.19	0.93243	27.4	27.4	0	ANNUAL	LINE	5	
592665.5	4249487.11	1.0059	27.38	27.38	0	ANNUAL	LINE	5	
592680.45	4249487.69	0.85203	27.35	27.35	0	ANNUAL	LINE	5	
592672	4249480.61	0.91664	27.35	27.35	0	ANNUAL	LINE	5	
592664.66	4249471.29	0.97007	27.29	27.29	0	ANNUAL	LINE	5	
592656.21	4249464.21	1.04996	27.34	27.34	0	ANNUAL	LINE	5	
592648.57	4249492.33	1.24829	27.39	27.39	0	ANNUAL	LINE	5	
592640.12	4249485.25	1.36191	27.4	27.4	0	ANNUAL	LINE	5	
592649.81	4249481.19	1.19283	27.4	27.4	0	ANNUAL	LINE	5	
592641.35	4249474.11	1.30031	27.4	27.4	0	ANNUAL	LINE	5	
592613.9	4249452.09	1.76643	27.4	27.4	0	ANNUAL	LINE	5	
592605.45	4249445.01	1.95197	27.39	27.39	0	ANNUAL	LINE	5	
592634.02	4249466.95	1.40114	27.39	27.39	0	ANNUAL	LINE	5	
592625.57	4249459.87	1.53703	27.4	27.4	0	ANNUAL	LINE	5	
592605.23	4249458.28	2.03968	27.39	27.39	0	ANNUAL	LINE	5	
592596.78	4249451.2	2.26383	27.39	27.39	0	ANNUAL	LINE	5	
592623.8	4249441.88	1.48909	27.34	27.34	0	ANNUAL	LINE	5	
592615.35	4249434.8	1.63673	27.32	27.32	0	ANNUAL	LINE	5	
592650.12	4249453.33	1.09397	27.3	27.3	0	ANNUAL	LINE	5	
592641.66	4249446.25	1.19047	27.29	27.29	0	ANNUAL	LINE	5	
592629.99	4249432.59	1.32664	27.29	27.29	0	ANNUAL	LINE	5	
592621.54	4249425.51	1.45279	27.29	27.29	0	ANNUAL	LINE	5	
592609.56	4249413.4	1.64653	27.29	27.29	0	ANNUAL	LINE	5	
592601.11	4249406.32	1.81316	27.29	27.29	0	ANNUAL	LINE	5	
592600.9	4249419.59	1.91372	27.3	27.3	0	ANNUAL	LINE	5	
592592.45	4249412.51	2.11716	27.3	27.3	0	ANNUAL	LINE	5	
592594.71	4249425.16	2.14318	27.36	27.36	0	ANNUAL	LINE	5	
592586.25	4249418.08	2.37954	27.33	27.33	0	ANNUAL	LINE	5	
592581.72	4249433.38	2.69703	27.4	27.4	0	ANNUAL	LINE	5	
592579.14	4249424.89	2.72866	27.38	27.38	0	ANNUAL	LINE	5	
592598.11	4249443.43	2.16542	27.4	27.4	0	ANNUAL	LINE	5	
592588.96	4249440.34	2.46452	27.39	27.39	0	ANNUAL	LINE	5	
592609.26	4249435.38	1.78943	27.34	27.34	0	ANNUAL	LINE	5	
592600.8	4249428.3	1.97744	27.35	27.35	0	ANNUAL	LINE	5	
592676.12	4249426.4	0.7334	27.19	27.19	0	ANNUAL	LINE	5	
592667.67	4249419.32	0.78785	27.19	27.19	0	ANNUAL	LINE	5	
592663.74	4249410.61	0.79913	27.19	27.19	0	ANNUAL	LINE	5	
592655.28	4249403.53	0.86126	27.19	27.19	0	ANNUAL	LINE	5	
592631.54	4249379.66	1.0566	27.2	27.2	0	ANNUAL	LINE	5	
592623.09	4249372.58	1.14633	27.2	27.2	0	ANNUAL	LINE	5	
592621.64	4249381.21	1.21489	27.19	27.19	0	ANNUAL	LINE	5	
592613.19	4249374.13	1.32318	27.19	27.19	0	ANNUAL	LINE	5	
592617.61	4249391.11	1.34102	27.22	27.22	0	ANNUAL	LINE	5	
592609.16	4249384.03	1.46583	27.21	27.21	0	ANNUAL	LINE	5	
592740.2	4249438.97	0.40474	27.16	27.16	0	ANNUAL	LINE	5	
592731.75	4249431.89	0.42621	27.18	27.18	0	ANNUAL	LINE	5	
592747.83	4249435.29	0.37437	27.14	27.14	0	ANNUAL	LINE	5	
592739.38	4249428.21	0.39344	27.13	27.13	0	ANNUAL	LINE	5	
592758.09	4249430.03	0.33788	27.12	27.12	0	ANNUAL	LINE	5	
592749.64	4249422.95	0.35418	27.1	27.1	0	ANNUAL	LINE	5	
592762.04	4249420.29	0.31728	27.09	27.09	0	ANNUAL	LINE	5	
592753.59	4249413.21	0.33219	27.09	27.09	0	ANNUAL	LINE	5	
592741.25	4249420.29	0.37711	27.12	27.12	0	ANNUAL	LINE	5	
592732.8	4249413.21	0.3967	27.1	27.1	0	ANNUAL	LINE	5	
592738.36	4249403.45	0.36588	27.09	27.09	0	ANNUAL	LINE	5	
592729.91	4249396.37	0.38493	27.09	27.09	0	ANNUAL	LINE	5	
592750.46	4249400.03	0.32684	27.09	27.09	0	ANNUAL	LINE	5	
592742.01	4249392.95	0.34285	27.09	27.09	0	ANNUAL	LINE	5	
592764.93	4249403.19	0.294	27.09	27.09	0	ANNUAL	LINE	5	
592756.48	4249396.11	0.30748	27.09	27.09	0	ANNUAL	LINE	5	
592762.83	4249411.34	0.30655	27.09	27.09	0	ANNUAL	LINE	5	
592754.38	4249404.26	0.32081	27.09	27.09	0	ANNUAL	LINE	5	
592750.72	4249387.14	0.31325	27.08	27.08	0	ANNUAL	LINE	5	
592742.27	4249380.06	0.32848	27.04	27.04	0	ANNUAL	LINE	5	
592737.57	4249384.24	0.34627	27.06	27.06	0	ANNUAL	LINE	5	
592729.12	4249377.16	0.36418	27.06	27.06	0	ANNUAL	LINE	5	
592732.31	4249370.56	0.34694	27.02	27.02	0	ANNUAL	LINE	5	
592723.85	4249363.48	0.36529	27.05	27.05	0	ANNUAL	LINE	5	
592742.3	4249369.77	0.31818	26.99	26.99	0	ANNUAL	LINE	5	
592733.85	4249362.69	0.3342	27	27	0	ANNUAL	LINE	5	
592753.62	4249368.46	0.28928	26.99	26.99	0	ANNUAL	LINE	5	
592745.17	4249361.38	0.30309	26.99	26.99	0	ANNUAL	LINE	5	

592752.02	4249355.31	1771.45803	26.99	26.99	0	ANNUAL	AREA	5
592743.57	4249348.23	1801.17441	26.99	26.99	0	ANNUAL	AREA	5
592733.81	4249350.21	1965.36555	26.99	26.99	0	ANNUAL	AREA	5
592725.36	4249343.13	1999.67818	26.99	26.99	0	ANNUAL	AREA	5
592731.63	4249335.64	1808.492	26.99	26.99	0	ANNUAL	AREA	5
592723.18	4249328.56	1833.81436	26.99	26.99	0	ANNUAL	AREA	5
592741.46	4249331.64	1635.91564	26.99	26.99	0	ANNUAL	AREA	5
592733.01	4249324.56	1655.93253	26.99	26.99	0	ANNUAL	AREA	5
592752.02	4249331.64	1517.5376	26.99	26.99	0	ANNUAL	AREA	5
592743.57	4249324.56	1534.84556	26.98	26.98	0	ANNUAL	AREA	5
592754.21	4249319.62	1378.7384	26.97	26.97	0	ANNUAL	AREA	5
592745.76	4249312.54	1391.1512	26.92	26.92	0	ANNUAL	AREA	5
592734.18	4249317.07	1557.03963	26.98	26.98	0	ANNUAL	AREA	5
592725.72	4249309.99	1572.53492	26.98	26.98	0	ANNUAL	AREA	5
592728.35	4249354.22	2107.41464	27	27	0	ANNUAL	AREA	5
592719.9	4249347.14	2147.83181	27	27	0	ANNUAL	AREA	5
592548	4249273.7	6670.41229	26.99	26.99	0	ANNUAL	AREA	5
592536.95	4249264.35	7122.9814	26.99	26.99	0	ANNUAL	AREA	5
592561.86	4249273.48	5445.81152	26.99	26.99	0	ANNUAL	AREA	5
592547.56	4249264.77	6060.72126	26.99	26.99	0	ANNUAL	AREA	5
592573.6	4249274.71	4731.64876	26.99	26.99	0	ANNUAL	AREA	5
592565.47	4249263.73	4676.31655	26.99	26.99	0	ANNUAL	AREA	5
592584.52	4249274.71	4140.01709	26.99	26.99	0	ANNUAL	AREA	5
592576.4	4249263.73	4080.26438	26.99	26.99	0	ANNUAL	AREA	5
592594.72	4249274.35	3669.57198	26.99	26.99	0	ANNUAL	AREA	5
592586.6	4249263.37	3611.21371	26.99	26.99	0	ANNUAL	AREA	5
592605.28	4249273.62	3250.84505	26.99	26.99	0	ANNUAL	AREA	5
592597.16	4249262.64	3196.30366	26.97	26.97	0	ANNUAL	AREA	5
592594.91	4249253.73	3038.14634	26.9	26.9	0	ANNUAL	AREA	5
592586.13	4249246.32	3164.50686	26.9	26.9	0	ANNUAL	AREA	5
592584.12	4249255.52	3467.76853	26.97	26.97	0	ANNUAL	AREA	5
592575.67	4249248.44	3621.25211	26.93	26.93	0	ANNUAL	AREA	5
592568.82	4249254.06	4108.5011	26.98	26.98	0	ANNUAL	AREA	5
592560.37	4249246.98	4344.45465	26.92	26.92	0	ANNUAL	AREA	5
592548.79	4249247.87	5139.02542	26.93	26.93	0	ANNUAL	AREA	5
592536.77	4249239.81	5932.58031	26.93	26.93	0	ANNUAL	AREA	5
592545.51	4249235.85	5064.08871	26.89	26.89	0	ANNUAL	AREA	5
592537.06	4249228.77	5697.30632	26.89	26.89	0	ANNUAL	AREA	5
592556.8	4249234.76	4266.14086	26.89	26.89	0	ANNUAL	AREA	5
592548.35	4249227.68	4719.79827	26.89	26.89	0	ANNUAL	AREA	5
592572.83	4249235.12	3461.70041	26.89	26.89	0	ANNUAL	AREA	5
592564.38	4249228.04	3749.26848	26.89	26.89	0	ANNUAL	AREA	5
592581.24	4249239.14	3198.39921	26.89	26.89	0	ANNUAL	AREA	5
592576.03	4249229.13	3243.92305	26.89	26.89	0	ANNUAL	AREA	5
592592.19	4249239.37	2836.34034	26.89	26.89	0	ANNUAL	AREA	5
592590.24	4249231.32	2779.37378	26.89	26.89	0	ANNUAL	AREA	5
592603.77	4249236.25	2472.78044	26.89	26.89	0	ANNUAL	AREA	5
592601.16	4249229.5	2455.89935	26.89	26.89	0	ANNUAL	AREA	5
592608.16	4249252.6	2632.1081	26.89	26.89	0	ANNUAL	AREA	5
592599.71	4249245.52	2724.10688	26.89	26.89	0	ANNUAL	AREA	5
592651.14	4249289.39	2420.97257	26.99	26.99	0	ANNUAL	AREA	5
592642.68	4249282.31	2452.05618	26.99	26.99	0	ANNUAL	AREA	5
592661.33	4249287.2	2173.2955	26.99	26.99	0	ANNUAL	AREA	5
592652.88	4249280.12	2198.74592	26.99	26.99	0	ANNUAL	AREA	5
592664.98	4249278.83	1965.53594	26.99	26.99	0	ANNUAL	AREA	5
592656.52	4249271.75	1988.76258	26.95	26.95	0	ANNUAL	AREA	5
592654.78	4249261.35	1859.79113	26.9	26.9	0	ANNUAL	AREA	5
592646.33	4249254.27	1891.82513	26.89	26.89	0	ANNUAL	AREA	5
592655.14	4249246.05	1667.72318	26.89	26.89	0	ANNUAL	AREA	5
592646.69	4249238.97	1709.1613	26.89	26.89	0	ANNUAL	AREA	5
592644.58	4249268.63	2143.93192	26.98	26.98	0	ANNUAL	AREA	5
592636.13	4249261.55	2178.77062	26.95	26.95	0	ANNUAL	AREA	5
592656.23	4249235.12	1551.4579	26.89	26.89	0	ANNUAL	AREA	5
592647.78	4249228.04	1600.71841	26.89	26.89	0	ANNUAL	AREA	5
592663.15	4249229.29	1428.74246	26.89	26.89	0	ANNUAL	AREA	5
592654.7	4249222.21	1476.86894	26.87	26.87	0	ANNUAL	AREA	5
592641.3	4249232.21	1722.09265	26.89	26.89	0	ANNUAL	AREA	5
592632.85	4249225.13	1789.26636	26.89	26.89	0	ANNUAL	AREA	5
592641.67	4249249.33	1900.05095	26.89	26.89	0	ANNUAL	AREA	5
592633.21	4249242.25	1949.99864	26.89	26.89	0	ANNUAL	AREA	5
592536.28	4249274.16	8103.26335	26.99	26.99	0	ANNUAL	AREA	5
592536.93	4249253.04	6412.77054	26.98	26.98	0	ANNUAL	AREA	5
592555.45	4249259.86	5152.30279	26.99	26.99	0	ANNUAL	AREA	5
592608.74	4249262.14	2825.68283	26.96	26.96	0	ANNUAL	AREA	5
592636.68	4249274.16	2408.49006	26.99	26.99	0	ANNUAL	AREA	5
592611.01	4249244.27	2415.91649	26.89	26.89	0	ANNUAL	AREA	5
592612.96	4249231.92	2210.71513	26.89	26.89	0	ANNUAL	AREA	5
592570	4249420.28	18839.98665	27.4	27.4	0	ANNUAL	AREA	5
592581.73	4249409.48	15525.20844	27.3	27.3	0	ANNUAL	AREA	5
592588.31	4249393.04	13062.74884	27.3	27.3	0	ANNUAL	AREA	5
592582.91	4249403.37	14892.09488	27.29	27.29	0	ANNUAL	AREA	5
592589.25	4249431.54	14954.70908	27.4	27.4	0	ANNUAL	AREA	5
592597.23	4249435.3	13649.92464	27.39	27.39	0	ANNUAL	AREA	5
592610.85	4249423.33	11100.34189	27.29	27.29	0	ANNUAL	AREA	5
592616.72	4249466.53	11516.74	27.39	27.39	0	ANNUAL	AREA	5
592627.28	4249441.17	9704.49378	27.33	27.33	0	ANNUAL	AREA	5
592616.58	4249358.85	6787.95633	27.17	27.17	0	ANNUAL	AREA	5
592630.08	4249360.2	5789.17938	27.13	27.13	0	ANNUAL	AREA	5
592621.98	4249349.85	5841.74006	27.11	27.11	0	ANNUAL	AREA	5
592670.1	4249400.68	4914.03144	27.2	27.2	0	ANNUAL	AREA	5
592620.53	4249411.57	9319.0899	27.3	27.3	0	ANNUAL	AREA	5
592636.28	4249425.38	8222.80915	27.29	27.29	0	ANNUAL	AREA	5
592648.16	4249379.8	5447.6117	27.17	27.17	0	ANNUAL	AREA	5
592686.28	4249434.22	4989.88702	27.2	27.2	0	ANNUAL	AREA	5
592687.1	4249422.06	4656.89028	27.19	27.19	0	ANNUAL	AREA	5

** CONCUNIT ug/ m^3
** DEPUNIT g/m^ 2

592752.02	4249355.31	0.28199	26.99	26.99	0	ANNUAL	LINE	5
592743.57	4249348.23	0.29555	26.99	26.99	0	ANNUAL	LINE	5
592733.81	4249350.21	0.32205	26.99	26.99	0	ANNUAL	LINE	5
592725.36	4249343.13	0.33887	26.99	26.99	0	ANNUAL	LINE	5
592731.63	4249335.64	0.31448	26.99	26.99	0	ANNUAL	LINE	5
592723.18	4249328.56	0.33104	26.99	26.99	0	ANNUAL	LINE	5
592741.46	4249331.64	0.28703	26.99	26.99	0	ANNUAL	LINE	5
592733.01	4249324.56	0.30153	26.99	26.99	0	ANNUAL	LINE	5
592752.02	4249331.64	0.26421	26.99	26.99	0	ANNUAL	LINE	5
592743.57	4249324.56	0.27696	26.98	26.98	0	ANNUAL	LINE	5
592754.21	4249319.62	0.25188	26.97	26.97	0	ANNUAL	LINE	5
592745.76	4249312.54	0.26396	26.92	26.92	0	ANNUAL	LINE	5
592734.18	4249317.07	0.29275	26.98	26.98	0	ANNUAL	LINE	5
592725.72	4249309.99	0.30805	26.98	26.98	0	ANNUAL	LINE	5
592728.35	4249354.22	0.34138	27	27	0	ANNUAL	LINE	5
592719.9	4249347.14	0.35966	27	27	0	ANNUAL	LINE	5
592548	4249273.7	1.98276	26.99	26.99	0	ANNUAL	LINE	5
592536.95	4249264.35	2.24265	26.99	26.99	0	ANNUAL	LINE	5
592561.86	4249273.48	1.59798	26.99	26.99	0	ANNUAL	LINE	5
592547.56	4249264.77	1.88478	26.99	26.99	0	ANNUAL	LINE	5
592573.6	4249274.71	1.36322	26.99	26.99	0	ANNUAL	LINE	5
592565.47	4249263.73	1.43748	26.99	26.99	0	ANNUAL	LINE	5
592584.52	4249274.71	1.17997	26.99	26.99	0	ANNUAL	LINE	5
592576.4	4249263.73	1.24165	26.99	26.99	0	ANNUAL	LINE	5
592594.72	4249274.35	1.03667	26.99	26.99	0	ANNUAL	LINE	5
592586.6	4249263.37	1.08954	26.99	26.99	0	ANNUAL	LINE	5
592605.28	4249273.62	0.91078	26.99	26.99	0	ANNUAL	LINE	5
592597.16	4249262.64	0.95643	26.97	26.97	0	ANNUAL	LINE	5
592594.91	4249253.73	0.94593	26.9	26.9	0	ANNUAL	LINE	5
592586.13	4249246.32	1.01638	26.9	26.9	0	ANNUAL	LINE	5
592584.12	4249255.52	1.08403	26.97	26.97	0	ANNUAL	LINE	5
592575.67	4249248.44	1.16512	26.93	26.93	0	ANNUAL	LINE	5
592568.82	4249254.06	1.30701	26.98	26.98	0	ANNUAL	LINE	5
592560.37	4249246.98	1.4117	26.92	26.92	0	ANNUAL	LINE	5
592548.79	4249247.87	1.67119	26.93	26.93	0	ANNUAL	LINE	5
592536.77	4249239.81	1.91309	26.93	26.93	0	ANNUAL	LINE	5
592545.51	4249235.85	1.63733	26.89	26.89	0	ANNUAL	LINE	5
592537.06	4249228.77	1.77941	26.89	26.89	0	ANNUAL	LINE	5
592556.8	4249234.76	1.39137	26.89	26.89	0	ANNUAL	LINE	5
592548.35	4249227.68	1.50381	26.89	26.89	0	ANNUAL	LINE	5
592572.83	4249235.12	1.13577	26.89	26.89	0	ANNUAL	LINE	5
592564.38	4249228.04	1.22082	26.89	26.89	0	ANNUAL	LINE	5
592581.24	4249239.14	1.04453	26.89	26.89	0	ANNUAL	LINE	5
592576.03	4249229.13	1.06451	26.89	26.89	0	ANNUAL	LINE	5
592592.19	4249239.37	0.92075	26.89	26.89	0	ANNUAL	LINE	5
592590.24	4249231.32	0.91182	26.89	26.89	0	ANNUAL	LINE	5
592603.77	4249236.25	0.80039	26.89	26.89	0	ANNUAL	LINE	5
592601.16	4249229.5	0.80327	26.89	26.89	0	ANNUAL	LINE	5
592608.16	4249252.6	0.81061	26.89	26.89	0	ANNUAL	LINE	5
592599.71	4249245.52	0.86662	26.89	26.89	0	ANNUAL	LINE	5
592651.14	4249289.39	0.5831	26.99	26.99	0	ANNUAL	LINE	5
592642.68	4249282.31	0.62193	26.99	26.99	0	ANNUAL	LINE	5
592661.33	4249287.2	0.52176	26.99	26.99	0	ANNUAL	LINE	5
592652.88	4249280.12	0.5556	26.99	26.99	0	ANNUAL	LINE	5
592664.98	4249278.83	0.49048	26.99	26.99	0	ANNUAL	LINE	5
592656.52	4249271.75	0.52183	26.95	26.95	0	ANNUAL	LINE	5
592654.78	4249261.35	0.51453	26.9	26.9	0	ANNUAL	LINE	5
592646.33	4249254.27	0.54746	26.89	26.89	0	ANNUAL	LINE	5
592655.14	4249246.05	0.49075	26.89	26.89	0	ANNUAL	LINE	5
592646.69	4249238.97	0.52165	26.89	26.89	0	ANNUAL	LINE	5
592644.58	4249268.63	0.58269	26.98	26.98	0	ANNUAL	LINE	5
592636.13	4249261.55	0.62097	26.95	26.95	0	ANNUAL	LINE	5
592656.23	4249235.12	0.47151	26.89	26.89	0	ANNUAL	LINE	5
592647.78	4249228.04	0.5008	26.89	26.89	0	ANNUAL	LINE	5
592663.15	4249229.29	0.43575	26.89	26.89	0	ANNUAL	LINE	5
592654.7	4249222.21	0.46238	26.87	26.87	0	ANNUAL	LINE	5
592641.3	4249232.21	0.53896	26.89	26.89	0	ANNUAL	LINE	5
592632.85	4249225.13	0.57305	26.89	26.89	0	ANNUAL	LINE	5
592641.67	4249249.33	0.56483	26.89	26.89	0	ANNUAL	LINE	5
592633.21	4249242.25	0.60135	26.89	26.89	0	ANNUAL	LINE	5
592536.28	4249274.16	2.43792	26.99	26.99	0	ANNUAL	LINE	5
592536.93	4249253.04	2.07755	26.98	26.98	0	ANNUAL	LINE	5
592555.45	4249259.86	1.62278	26.99	26.99	0	ANNUAL	LINE	5
592608.74	4249262.14	0.83552	26.96	26.96	0	ANNUAL	LINE	5
592636.68	4249274.16	0.64421	26.99	26.99	0	ANNUAL	LINE	5
592611.01	4249244.27	0.76213	26.89	26.89	0	ANNUAL	LINE	5
592612.96	4249231.92	0.7151	26.89	26.89	0	ANNUAL	LINE	5
592570	4249420.28	3.1139	27.4	27.4	0	ANNUAL	LINE	5
592581.73	4249409.48	2.47345	27.3	27.3	0	ANNUAL	LINE	5
592588.31	4249393.04	2.08518	27.3	27.3	0	ANNUAL	LINE	5
592582.91	4249403.37	2.36977	27.29	27.29	0	ANNUAL	LINE	5
592589.25	4249431.54	2.38246	27.4	27.4	0	ANNUAL	LINE	5
592597.23	4249435.3	2.13654	27.39	27.39	0	ANNUAL	LINE	5
592610.85	4249423.33	1.67688	27.29	27.29	0	ANNUAL	LINE	5
592616.72	4249466.53	1.77122	27.39	27.39	0	ANNUAL	LINE	5
592627.28	4249441.17	1.41657	27.33	27.33	0	ANNUAL	LINE	5
592616.58	4249358.85	1.17523	27.17	27.17	0	ANNUAL	LINE	5
592630.08	4249360.2	0.98872	27.13	27.13	0	ANNUAL	LINE	5
592621.98	4249349.85	1.04798	27.11	27.11	0	ANNUAL	LINE	5
592670.1	4249400.68	0.71517	27.2	27.2	0	ANNUAL	LINE	5
592620.53	4249411.57	1.39906	27.3	27.3	0	ANNUAL	LINE	5
592636.28	4249425.38	1.18937	27.29	27.29	0	ANNUAL	LINE	5
592648.16	4249379.8	0.85566	27.17	27.17	0	ANNUAL	LINE	5
592686.28	4249434.22	0.67366	27.2	27.2	0	ANNUAL	LINE	5
592687.1	4249422.06	0.6399	27.19	27.19	0	ANNUAL	LINE	5

** CONCUNIT ug/ m^3
** DEPUNIT g/m^ 2

Cancer Risk Calculations Using OEHHA/BAAQMD Cancer Risk Assumptions
Vacaville Hotel Project (Flagpole Receptors 1.8 meters)
Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Infant
MIR UTM: 592570 4249420.28

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.027846002	10	361	0.85	0.25	0.3219
0-1	0.027846002	10	1090	0.85	0.70	2.7133
					Total	3.035

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Child
MIR UTM: 592570 4249420.28

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.027846002	3	572	0.72	0.95	0.4914
					Total	0.4914

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Adult
MIR UTM: 592570 4249420.28

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.027846002	1	261	0.73	0.95	0.0758
					Total	0.0758

Vacaville Hotel Project

(Flagpole Receptors 1.8 meters)

MIR UTM: 592570 4249420.28

Estimates of Chronic Non-Cancer Hazard Index (CNCHI)

Unmitigated

Chronic Non-Cancer Hazard Index at the Maximum Impacted Sensitive Receptor

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X (m)	Y (m)	Average DPM (ug/m3)	Max DPM (ug/m3)	CNCHI
592570	4249420.28	0.0278	0.0278	0.00557

Unmitigated

Annual PM2.5 Total (Exhaust + Fugitive Dust)

X (m)	Y (m)	Average PM2.5 Total (ug/m3)	Max PM2.5 (ug/m3)
592570	4249420.28	0.0307	0.0307

Vacaville Hotel Project

(Flagpole Receptors 1.8 meters)

Construction Annual DPM Emissions (PM2.5 Exhaust)

	Unmitigated Concentrations (Flagpole Receptors 1.8 meters)	**Maximum DPM (ug/m3)**
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	1.49E-06	2.7846E-02
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	7.77E-06	

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite Road Segment 1 Annual DPM Exhaust w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
592570	4249420.28	18662.33293	3.04795	2.78E-02	2.37E-05	2.7846E-02
592579.14	4249424.89	16652.01042	2.67102	2.48E-02	2.08E-05	2.4846E-02
592581.72	4249433.38	16357.32331	2.6396	2.44E-02	2.05E-05	2.4406E-02
592581.73	4249409.48	15353.99627	2.42173	2.29E-02	1.88E-05	2.2909E-02
592588.96	4249440.34	15112.10488	2.41201	2.25E-02	1.87E-05	2.2548E-02
592586.25	4249418.08	14862.18468	2.32928	2.22E-02	1.81E-05	2.2175E-02
592589.25	4249431.54	14813.58534	2.33032	2.21E-02	1.81E-05	2.2103E-02
592582.91	4249403.37	14713.67258	2.31892	2.19E-02	1.80E-05	2.1954E-02
592596.78	4249451.2	13976.7593	2.21521	2.08E-02	1.72E-05	2.0854E-02
592598.11	4249443.43	13605.07394	2.11784	2.03E-02	1.65E-05	2.0299E-02
592594.71	4249425.16	13581.42831	2.09629	2.02E-02	1.63E-05	2.0264E-02
592597.23	4249435.3	13520.93328	2.0894	2.02E-02	1.62E-05	2.0174E-02
592592.45	4249412.51	13381.37676	2.07161	1.99E-02	1.61E-05	1.9965E-02
592588.31	4249393.04	12877.25939	2.03623	1.92E-02	1.58E-05	1.9214E-02
592605.23	4249458.28	12815.01255	1.99529	1.91E-02	1.55E-05	1.9120E-02
592600.8	4249428.3	12686.19252	1.93406	1.89E-02	1.50E-05	1.8928E-02
592605.45	4249445.01	12514.28694	1.90869	1.87E-02	1.48E-05	1.8671E-02
592600.9	4249419.59	12294.29264	1.87243	1.83E-02	1.46E-05	1.8343E-02
592609.98	4249527.8	11718.71547	2.22557	1.75E-02	1.73E-05	1.7488E-02
592609.26	4249435.38	11674.12918	1.75024	1.74E-02	1.36E-05	1.7418E-02
592601.11	4249406.32	11554.05584	1.772	1.72E-02	1.38E-05	1.7239E-02
592613.9	4249452.09	11519.77768	1.72654	1.72E-02	1.34E-05	1.7187E-02
592616.72	4249466.53	11433.55395	1.73215	1.70E-02	1.35E-05	1.7059E-02
592611.53	4249546.37	11108.91252	2.27592	1.66E-02	1.77E-05	1.6579E-02
592610.85	4249423.33	10980.36544	1.64026	1.64E-02	1.27E-05	1.6383E-02
592615.35	4249434.8	10827.30594	1.60082	1.61E-02	1.24E-05	1.6154E-02
592609.56	4249413.4	10689.21673	1.60923	1.59E-02	1.25E-05	1.5948E-02
592624.53	4249515.73	10664.92218	1.76143	1.59E-02	1.37E-05	1.5913E-02
592622.54	4249529.84	10644.80023	1.86862	1.59E-02	1.45E-05	1.5884E-02
592626.05	4249471.59	10443.54545	1.54425	1.56E-02	1.20E-05	1.5582E-02
592625.57	4249459.87	10288.56543	1.50197	1.53E-02	1.17E-05	1.5350E-02
592623.8	4249441.88	10023.24175	1.45569	1.49E-02	1.13E-05	1.4954E-02
592629.48	4249538.94	9979.81567	1.73769	1.49E-02	1.35E-05	1.4892E-02
592627.15	4249451.2	9909.20471	1.43176	1.48E-02	1.11E-05	1.4784E-02
592628.22	4249549.14	9894.03134	1.80928	1.48E-02	1.41E-05	1.4764E-02
592635.03	4249509.4	9800.34574	1.50997	1.46E-02	1.17E-05	1.4622E-02
592635.06	4249525.32	9724.6141	1.56751	1.45E-02	1.22E-05	1.4510E-02
592621.54	4249425.51	9701.65616	1.4202	1.45E-02	1.10E-05	1.4475E-02
592627.28	4249441.17	9607.24527	1.38474	1.43E-02	1.08E-05	1.4334E-02
592636.25	4249482.51	9562.88147	1.38979	1.43E-02	1.08E-05	1.4267E-02
592634.02	4249466.95	9541.92622	1.36951	1.42E-02	1.06E-05	1.4236E-02
592639.57	4249537.78	9287.66932	1.52272	1.38E-02	1.18E-05	1.3858E-02
592640.12	4249485.25	9240.82382	1.3318	1.38E-02	1.03E-05	1.3787E-02
592620.53	4249411.57	9198.98341	1.36563	1.37E-02	1.06E-05	1.3725E-02
592641.87	4249497.77	9197.5092	1.34534	1.37E-02	1.05E-05	1.3722E-02
592638.02	4249559.67	9098.39846	1.63135	1.36E-02	1.27E-05	1.3577E-02
592609.16	4249384.03	9034.02441	1.42999	1.35E-02	1.11E-05	1.3479E-02
592629.99	4249432.59	9025.80601	1.29693	1.35E-02	1.01E-05	1.3466E-02
592638.43	4249460.67	8983.15097	1.26905	1.34E-02	9.86E-06	1.3402E-02
592641.35	4249474.11	8973.28724	1.27093	1.34E-02	9.88E-06	1.3387E-02
592645.89	4249511.7	8931.11289	1.32462	1.33E-02	1.03E-05	1.3325E-02
592646.39	4249524.16	8892.02015	1.35697	1.33E-02	1.05E-05	1.3267E-02
592647.73	4249550.69	8635.08867	1.41834	1.29E-02	1.10E-05	1.2884E-02
592648.57	4249492.33	8603.89413	1.22138	1.28E-02	9.49E-06	1.2836E-02
592617.61	4249391.11	8469.55276	1.30847	1.26E-02	1.02E-05	1.2637E-02
592651.24	4249500.1	8465.93862	1.20669	1.26E-02	9.38E-06	1.2631E-02
592649.81	4249481.19	8359.80516	1.16623	1.25E-02	9.06E-06	1.2472E-02
592641.66	4249446.25	8314.73167	1.16434	1.24E-02	9.05E-06	1.2405E-02
592652.08	4249489.1	8288.29866	1.15989	1.24E-02	9.01E-06	1.2365E-02
592649.79	4249474.19	8245.60539	1.14324	1.23E-02	8.88E-06	1.2302E-02
592657.03	4249538.94	8144.58704	1.23898	1.21E-02	9.63E-06	1.2152E-02
592636.28	4249425.38	8126.73529	1.16158	1.21E-02	9.03E-06	1.2125E-02
592657.96	4249522.23	8092.83858	1.17706	1.21E-02	9.15E-06	1.2074E-02

592613.19	4249374.13	7941.34131	1.28931	1.18E-02	1.00E-05	1.1849E-02
592659.51	4249508.91	7928.72305	1.11862	1.18E-02	8.69E-06	1.1829E-02
592536.28	4249274.16	7912.3284	2.32879	1.18E-02	1.81E-05	1.1814E-02
592659.51	4249494.37	7794.70662	1.07696	1.16E-02	8.37E-06	1.1629E-02
592650.12	4249453.33	7769.41228	1.06995	1.16E-02	8.31E-06	1.1591E-02
592658.27	4249481.06	7699.35563	1.05273	1.15E-02	8.18E-06	1.1487E-02
592626.42	4249393.69	7693.65176	1.17186	1.15E-02	9.11E-06	1.1479E-02
592666.62	4249530.04	7561.8088	1.08755	1.13E-02	8.45E-06	1.1282E-02
592656.21	4249464.21	7537.81138	1.02669	1.12E-02	7.98E-06	1.1246E-02
592621.64	4249381.21	7498.49656	1.18446	1.12E-02	9.20E-06	1.1188E-02
592650.08	4249442.47	7475.02356	1.03278	1.11E-02	8.03E-06	1.1152E-02
592667.96	4249501.45	7295.73871	0.99625	1.09E-02	7.74E-06	1.0884E-02
592665.5	4249487.11	7276.58017	0.9843	1.08E-02	7.65E-06	1.0856E-02
592670.65	4249512.01	7223.65069	0.99427	1.08E-02	7.73E-06	1.0777E-02
592664.66	4249471.29	7067.35911	0.94997	1.05E-02	7.38E-06	1.0544E-02
592536.95	4249264.35	6953.64054	2.1438	1.04E-02	1.67E-05	1.0383E-02
592623.09	4249372.58	6887.11917	1.11605	1.03E-02	8.67E-06	1.0276E-02
592677.77	4249519.75	6856.79054	0.93816	1.02E-02	7.29E-06	1.0230E-02
592673.95	4249494.19	6823.51879	0.91259	1.02E-02	7.09E-06	1.0180E-02
592672	4249480.61	6741.97935	0.89712	1.01E-02	6.97E-06	1.0058E-02
592616.58	4249358.85	6679.93672	1.14317	9.96E-03	8.88E-06	9.9675E-03
592678.7	4249503.34	6651.09418	0.88918	9.92E-03	6.91E-06	9.9225E-03
592631.54	4249379.66	6539.05689	1.02928	9.75E-03	8.00E-06	9.7566E-03
592548	4249273.7	6521.36976	1.90188	9.72E-03	1.48E-05	9.7370E-03
592638.07	4249388.59	6438.71401	0.98247	9.60E-03	7.64E-06	9.6066E-03
592658.82	4249429	6406.79398	0.88473	9.55E-03	6.88E-06	9.5583E-03
592684.99	4249512.8	6396.20826	0.85364	9.54E-03	6.63E-06	9.5423E-03
592680.45	4249487.69	6338.29458	0.83439	9.45E-03	6.48E-06	9.4558E-03
592536.93	4249253.04	6264.06058	1.98948	9.34E-03	1.55E-05	9.3541E-03
592687.06	4249495.91	6084.43437	0.7964	9.07E-03	6.19E-06	9.0770E-03
592658.82	4249416.26	6006.9272	0.84542	8.96E-03	6.57E-06	8.9619E-03
592651.54	4249400.97	5963.03677	0.87139	8.89E-03	6.77E-06	8.8966E-03
592547.56	4249264.77	5923.0968	1.8083	8.83E-03	1.41E-05	8.8444E-03
592536.77	4249239.81	5815.10966	1.84049	8.67E-03	1.43E-05	8.6836E-03
592655.28	4249403.53	5806.6292	0.84067	8.66E-03	6.53E-06	8.6632E-03
592695.42	4249504.89	5762.84195	0.74905	8.59E-03	5.82E-06	8.5972E-03
592621.98	4249349.85	5754.41543	1.01987	8.58E-03	7.93E-06	8.5868E-03
592630.08	4249360.2	5705.27847	0.96279	8.51E-03	7.48E-06	8.5131E-03
592673.74	4249434.09	5604.95763	0.75698	8.36E-03	5.88E-06	8.3619E-03
592537.06	4249228.77	5602.5731	1.72001	8.35E-03	1.34E-05	8.3658E-03
592667.67	4249419.32	5548.09036	0.76992	8.27E-03	5.98E-06	8.2772E-03
592663.74	4249410.61	5514.68173	0.7804	8.22E-03	6.06E-06	8.2275E-03
592648.16	4249379.8	5373.33263	0.83385	8.01E-03	6.48E-06	8.0172E-03
592561.86	4249273.48	5331.30066	1.53946	7.95E-03	1.20E-05	7.9600E-03
592676.12	4249426.4	5267.25001	0.71708	7.85E-03	5.57E-06	7.8581E-03
592548.79	4249247.87	5038.96934	1.61012	7.51E-03	1.25E-05	7.5247E-03
592555.45	4249259.86	5038.66198	1.56135	7.51E-03	1.21E-05	7.5239E-03
592545.51	4249235.85	4978.45661	1.58203	7.42E-03	1.23E-05	7.4343E-03
592686.28	4249434.22	4937.03896	0.65893	7.36E-03	5.12E-06	7.3654E-03
592670.1	4249400.68	4852.26953	0.69757	7.23E-03	5.42E-06	7.2393E-03
592548.35	4249227.68	4644.17093	1.45681	6.92E-03	1.13E-05	6.9350E-03
592573.6	4249274.71	4637.28775	1.3172	6.91E-03	1.02E-05	6.9236E-03
592687.1	4249422.06	4605.07432	0.62541	6.87E-03	4.86E-06	6.8702E-03
592565.47	4249263.73	4577.44361	1.38658	6.82E-03	1.08E-05	6.8350E-03
592560.37	4249246.98	4265.31053	1.36472	6.36E-03	1.06E-05	6.3694E-03
592556.8	4249234.76	4196.79487	1.34782	6.26E-03	1.05E-05	6.2672E-03
592584.52	4249274.71	4061.17132	1.14269	6.05E-03	8.88E-06	6.0634E-03
592568.82	4249254.06	4024.08888	1.26283	6.00E-03	9.81E-06	6.0090E-03
592576.4	4249263.73	3997.63215	1.20072	5.96E-03	9.33E-06	5.9691E-03
592564.38	4249228.04	3691.75209	1.18568	5.50E-03	9.21E-06	5.5130E-03
592594.72	4249274.35	3602.37892	1.00564	5.37E-03	7.82E-06	5.3783E-03
592575.67	4249248.44	3556.69072	1.12948	5.30E-03	8.78E-06	5.3112E-03
592586.6	4249263.37	3540.75336	1.0557	5.28E-03	8.20E-06	5.2869E-03
592572.83	4249235.12	3407.7912	1.10331	5.08E-03	8.57E-06	5.0890E-03
592584.12	4249255.52	3401.68967	1.0508	5.07E-03	8.17E-06	5.0795E-03
592731.75	4249431.89	3198.22097	0.4173	4.77E-03	3.24E-06	4.7712E-03
592576.03	4249229.13	3195.34595	1.03547	4.76E-03	8.05E-06	4.7718E-03
592605.28	4249273.62	3193.5896	0.8848	4.76E-03	6.88E-06	4.7680E-03
592581.24	4249239.14	3148.9512	1.01555	4.69E-03	7.89E-06	4.7024E-03
592597.16	4249262.64	3138.68805	0.9288	4.68E-03	7.22E-06	4.6865E-03
592586.13	4249246.32	3114.06119	0.98804	4.64E-03	7.68E-06	4.6502E-03
592740.2	4249438.97	3079.5479	0.39673	4.59E-03	3.08E-06	4.5942E-03
592594.91	4249253.73	2990.81252	0.92035	4.46E-03	7.15E-06	4.4659E-03
592739.38	4249428.21	2944.36602	0.38562	4.39E-03	3.00E-06	4.3925E-03
592732.8	4249413.21	2881.21432	0.38866	4.30E-03	3.02E-06	4.2984E-03

592747.83	4249435.29	2840.47005	0.36711	4.23E-03	2.85E-06	4.2375E-03
592592.19	4249239.37	2793.7173	0.89657	4.16E-03	6.97E-06	4.1719E-03
592741.25	4249420.29	2784.76005	0.36956	4.15E-03	2.87E-06	4.1545E-03
592608.74	4249262.14	2777.77111	0.81281	4.14E-03	6.32E-06	4.1475E-03
592590.24	4249231.32	2738.77427	0.88835	4.08E-03	6.90E-06	4.0899E-03
592729.91	4249396.37	2686.90929	0.37684	4.01E-03	2.93E-06	4.0086E-03
592599.71	4249245.52	2683.50448	0.84429	4.00E-03	6.56E-06	4.0072E-03
592749.64	4249422.95	2635.3368	0.34739	3.93E-03	2.70E-06	3.9315E-03
592738.36	4249403.45	2606.75906	0.35843	3.89E-03	2.79E-06	3.8890E-03
592608.16	4249252.6	2593.76214	0.79024	3.87E-03	6.14E-06	3.8730E-03
592758.09	4249430.03	2549.52779	0.33147	3.80E-03	2.58E-06	3.8035E-03
592603.77	4249236.25	2437.11949	0.78062	3.63E-03	6.07E-06	3.6394E-03
592753.59	4249413.21	2428.66414	0.32577	3.62E-03	2.53E-06	3.6233E-03
592601.16	4249229.5	2421.24548	0.78369	3.61E-03	6.09E-06	3.6157E-03
592642.68	4249282.31	2415.83876	0.60621	3.60E-03	4.71E-06	3.6063E-03
592729.12	4249377.16	2408.73122	0.35647	3.59E-03	2.77E-06	3.5938E-03
592651.14	4249289.39	2387.40766	0.56866	3.56E-03	4.42E-06	3.5636E-03
592742.01	4249392.95	2383.75061	0.33575	3.55E-03	2.61E-06	3.5564E-03
592611.01	4249244.27	2381.09285	0.74347	3.55E-03	5.78E-06	3.5556E-03
592636.68	4249274.16	2370.77144	0.62769	3.53E-03	4.88E-06	3.5393E-03
592762.04	4249420.29	2356.4525	0.31135	3.51E-03	2.42E-06	3.5155E-03
592737.57	4249384.24	2348.12349	0.33915	3.50E-03	2.64E-06	3.5033E-03
592750.46	4249400.03	2319.19783	0.32029	3.46E-03	2.49E-06	3.4600E-03
592723.85	4249363.48	2302.88164	0.35738	3.43E-03	2.78E-06	3.4360E-03
592754.38	4249404.26	2301.33942	0.31449	3.43E-03	2.44E-06	3.4333E-03
592732.31	4249370.56	2252.27361	0.33988	3.36E-03	2.64E-06	3.3604E-03
592762.83	4249411.34	2237.46416	0.3007	3.34E-03	2.34E-06	3.3380E-03
592742.27	4249380.06	2205.85268	0.3219	3.29E-03	2.50E-06	3.2910E-03
592612.96	4249231.92	2180.00521	0.69829	3.25E-03	5.43E-06	3.2554E-03
592652.88	4249280.12	2167.06178	0.54189	3.23E-03	4.21E-06	3.2349E-03
592756.48	4249396.11	2165.13059	0.30134	3.23E-03	2.34E-06	3.2302E-03
592750.72	4249387.14	2151.7369	0.30688	3.21E-03	2.38E-06	3.2103E-03
592636.13	4249261.55	2145.81347	0.60575	3.20E-03	4.71E-06	3.2037E-03
592661.33	4249287.2	2143.85321	0.50911	3.20E-03	3.96E-06	3.2001E-03
592719.9	4249347.14	2128.1351	0.35207	3.17E-03	2.74E-06	3.1754E-03
592733.85	4249362.69	2115.44332	0.3275	3.15E-03	2.55E-06	3.1563E-03
592644.58	4249268.63	2111.17126	0.56823	3.15E-03	4.42E-06	3.1518E-03
592764.93	4249403.19	2109.46705	0.28832	3.14E-03	2.24E-06	3.1471E-03
592728.35	4249354.22	2088.81447	0.33437	3.11E-03	2.60E-06	3.1167E-03
592742.3	4249369.77	2071.65087	0.31206	3.09E-03	2.43E-06	3.0909E-03
592725.36	4249343.13	1981.7818	0.33185	2.95E-03	2.58E-06	2.9571E-03
592656.52	4249271.75	1961.62561	0.5096	2.92E-03	3.96E-06	2.9284E-03
592733.81	4249350.21	1948.47635	0.31556	2.90E-03	2.45E-06	2.9073E-03
592664.98	4249278.83	1938.14253	0.47867	2.89E-03	3.72E-06	2.8932E-03
592633.21	4249242.25	1923.6206	0.58777	2.87E-03	4.57E-06	2.8724E-03
592745.17	4249361.38	1922.0854	0.29723	2.87E-03	2.31E-06	2.8678E-03
592753.62	4249368.46	1885.2566	0.28384	2.81E-03	2.21E-06	2.8128E-03
592641.67	4249249.33	1874.97316	0.55223	2.80E-03	4.29E-06	2.7996E-03
592646.33	4249254.27	1867.35849	0.53532	2.78E-03	4.16E-06	2.7881E-03
592654.78	4249261.35	1836.19424	0.50316	2.74E-03	3.91E-06	2.7414E-03
592723.18	4249328.56	1816.58972	0.32404	2.71E-03	2.52E-06	2.7107E-03
592731.63	4249335.64	1792.27419	0.30799	2.67E-03	2.39E-06	2.6744E-03
592743.57	4249348.23	1786.06822	0.28969	2.66E-03	2.25E-06	2.6650E-03
592632.85	4249225.13	1766.11027	0.56069	2.63E-03	4.36E-06	2.6373E-03
592752.02	4249355.31	1757.17499	0.27656	2.62E-03	2.15E-06	2.6218E-03
592641.3	4249232.21	1699.68138	0.52735	2.53E-03	4.10E-06	2.5380E-03
592646.69	4249238.97	1686.94867	0.51038	2.51E-03	3.97E-06	2.5189E-03
592655.14	4249246.05	1646.50818	0.48023	2.45E-03	3.73E-06	2.4584E-03
592733.01	4249324.56	1640.56858	0.29525	2.45E-03	2.29E-06	2.4481E-03
592741.46	4249331.64	1621.44555	0.2812	2.42E-03	2.19E-06	2.4195E-03
592647.78	4249228.04	1580.49323	0.49031	2.36E-03	3.81E-06	2.3601E-03
592725.72	4249309.99	1557.01199	0.30153	2.32E-03	2.34E-06	2.3236E-03
592734.18	4249317.07	1542.45564	0.2867	2.30E-03	2.23E-06	2.3018E-03
592656.23	4249235.12	1531.89378	0.46164	2.28E-03	3.59E-06	2.2874E-03
592743.57	4249324.56	1521.24356	0.27138	2.27E-03	2.11E-06	2.2700E-03
592752.02	4249331.64	1504.4775	0.25896	2.24E-03	2.01E-06	2.2449E-03
592654.7	4249222.21	1459.82943	0.45323	2.18E-03	3.52E-06	2.1799E-03
592663.15	4249229.29	1411.24608	0.42689	2.10E-03	3.32E-06	2.1072E-03
592745.76	4249312.54	1379.74719	0.259	2.06E-03	2.01E-06	2.0590E-03
592754.21	4249319.62	1366.83247	0.24695	2.04E-03	1.92E-06	2.0396E-03
CONCUNIT ug/	m^3					
DEPUNIT g/m^	2					

Vacaville Hotel Project

(Flagpole Receptors 1.8 meters)

Construction Annual Total PM2.5 Emissions (PM2.5 Total)

Unmitigated Concentrations (Flagpole Receptors 1.8 meters)

Maximum PM2.5 Total (ug/m3)

Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec): 1.63E-06 3.0711E-02

Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec): 6.95E-05

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual PM2.5 Total w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
592570	4249420.28	18662.33293	3.04795	3.05E-02	2.12E-04	3.0711E-02
592579.14	4249424.89	16652.01042	2.67102	2.72E-02	1.86E-04	2.7399E-02
592581.72	4249433.38	16357.32331	2.6396	2.67E-02	1.83E-04	2.6915E-02
592581.73	4249409.48	15353.99627	2.42173	2.51E-02	1.68E-04	2.5261E-02
592588.96	4249440.34	15112.10488	2.41201	2.47E-02	1.68E-04	2.4865E-02
592586.25	4249418.08	14862.18468	2.32928	2.43E-02	1.62E-04	2.4450E-02
592589.25	4249431.54	14813.58534	2.33032	2.42E-02	1.62E-04	2.4371E-02
592582.91	4249403.37	14713.67258	2.31892	2.40E-02	1.61E-04	2.4207E-02
592596.78	4249451.2	13976.7593	2.21521	2.28E-02	1.54E-04	2.2995E-02
592598.11	4249443.43	13605.07394	2.11784	2.22E-02	1.47E-04	2.2381E-02
592594.71	4249425.16	13581.42831	2.09629	2.22E-02	1.46E-04	2.2341E-02
592597.23	4249435.3	13520.93328	2.0894	2.21E-02	1.45E-04	2.2242E-02
592592.45	4249412.51	13381.37676	2.07161	2.19E-02	1.44E-04	2.2012E-02
592588.31	4249393.04	12877.25939	2.03623	2.10E-02	1.42E-04	2.1186E-02
592605.23	4249458.28	12815.01255	1.99529	2.09E-02	1.39E-04	2.1082E-02
592600.8	4249428.3	12686.19252	1.93406	2.07E-02	1.34E-04	2.0867E-02
592605.45	4249445.01	12514.28694	1.90869	2.05E-02	1.33E-04	2.0584E-02
592600.9	4249419.59	12294.29264	1.87243	2.01E-02	1.30E-04	2.0222E-02
592609.98	4249527.8	11718.71547	2.22557	1.92E-02	1.55E-04	1.9306E-02
592609.26	4249435.38	11674.12918	1.75024	1.91E-02	1.22E-04	1.9200E-02
592601.11	4249406.32	11554.05584	1.772	1.89E-02	1.23E-04	1.9005E-02
592613.9	4249452.09	11519.77768	1.72654	1.88E-02	1.20E-04	1.8946E-02
592616.72	4249466.53	11433.55395	1.73215	1.87E-02	1.20E-04	1.8806E-02
592611.53	4249546.37	11108.91252	2.27592	1.82E-02	1.58E-04	1.8313E-02
592610.85	4249423.33	10980.36544	1.64026	1.79E-02	1.14E-04	1.8059E-02
592615.35	4249434.8	10827.30594	1.60082	1.77E-02	1.11E-04	1.7806E-02
592609.56	4249413.4	10689.21673	1.60923	1.75E-02	1.12E-04	1.7581E-02
592624.53	4249515.73	10664.92218	1.76143	1.74E-02	1.22E-04	1.7552E-02
592622.54	4249529.84	10644.80023	1.86862	1.74E-02	1.30E-04	1.7526E-02
592626.05	4249471.59	10443.54545	1.54425	1.71E-02	1.07E-04	1.7175E-02
592625.57	4249459.87	10288.56543	1.50197	1.68E-02	1.04E-04	1.6918E-02
592623.8	4249441.88	10023.24175	1.45569	1.64E-02	1.01E-04	1.6482E-02
592629.48	4249538.94	9979.81567	1.73769	1.63E-02	1.21E-04	1.6430E-02
592627.15	4249451.2	9909.20471	1.43176	1.62E-02	9.95E-05	1.6294E-02
592628.22	4249549.14	9894.03134	1.80928	1.62E-02	1.26E-04	1.6295E-02
592635.03	4249509.4	9800.34574	1.50997	1.60E-02	1.05E-04	1.6121E-02
592635.06	4249525.32	9724.6141	1.56751	1.59E-02	1.09E-04	1.6001E-02
592621.54	4249425.51	9701.65616	1.4202	1.59E-02	9.87E-05	1.5954E-02
592627.28	4249441.17	9607.24527	1.38474	1.57E-02	9.62E-05	1.5797E-02
592636.25	4249482.51	9562.88147	1.38979	1.56E-02	9.66E-05	1.5725E-02
592634.02	4249466.95	9541.92622	1.36951	1.56E-02	9.52E-05	1.5689E-02
592639.57	4249537.78	9287.66932	1.52272	1.52E-02	1.06E-04	1.5284E-02
592640.12	4249485.25	9240.82382	1.3318	1.51E-02	9.26E-05	1.5194E-02
592620.53	4249411.57	9198.98341	1.36563	1.50E-02	9.49E-05	1.5128E-02
592641.87	4249497.77	9197.5092	1.34534	1.50E-02	9.35E-05	1.5124E-02
592638.02	4249559.67	9098.39846	1.63135	1.49E-02	1.13E-04	1.4982E-02
592609.16	4249384.03	9034.02441	1.42999	1.48E-02	9.94E-05	1.4863E-02
592629.99	4249432.59	9025.80601	1.29693	1.48E-02	9.01E-05	1.4841E-02
592638.43	4249460.67	8983.15097	1.26905	1.47E-02	8.82E-05	1.4769E-02
592641.35	4249474.11	8973.28724	1.27093	1.47E-02	8.83E-05	1.4753E-02
592645.89	4249511.7	8931.11289	1.32462	1.46E-02	9.21E-05	1.4688E-02
592646.39	4249524.16	8892.02015	1.35697	1.45E-02	9.43E-05	1.4626E-02
592647.73	4249550.69	8635.08867	1.41834	1.41E-02	9.86E-05	1.4210E-02
592648.57	4249492.33	8603.89413	1.22138	1.41E-02	8.49E-05	1.4146E-02
592617.61	4249391.11	8469.55276	1.30847	1.38E-02	9.09E-05	1.3932E-02
592651.24	4249500.1	8465.93862	1.20669	1.38E-02	8.39E-05	1.3919E-02
592649.81	4249481.19	8359.80516	1.16623	1.37E-02	8.11E-05	1.3743E-02
592641.66	4249446.25	8314.73167	1.16434	1.36E-02	8.09E-05	1.3669E-02
592652.08	4249489.1	8288.29866	1.15989	1.35E-02	8.06E-05	1.3626E-02
592649.79	4249474.19	8245.60539	1.14324	1.35E-02	7.95E-05	1.3555E-02
592657.03	4249538.94	8144.58704	1.23898	1.33E-02	8.61E-05	1.3396E-02
592636.28	4249425.38	8126.73529	1.16158	1.33E-02	8.07E-05	1.3362E-02
592657.96	4249522.23	8092.83858	1.17706	1.32E-02	8.18E-05	1.3307E-02

592613.19	4249374.13	7941.34131	1.28931	1.30E-02	8.96E-05	1.3068E-02
592659.51	4249508.91	7928.72305	1.11862	1.30E-02	7.77E-05	1.3035E-02
592536.28	4249274.16	7912.3284	2.32879	1.29E-02	1.62E-04	1.3093E-02
592659.51	4249494.37	7794.70662	1.07696	1.27E-02	7.48E-05	1.2813E-02
592650.12	4249453.33	7769.41228	1.06995	1.27E-02	7.44E-05	1.2771E-02
592658.27	4249481.06	7699.35563	1.05273	1.26E-02	7.32E-05	1.2656E-02
592626.42	4249393.69	7693.65176	1.17186	1.26E-02	8.14E-05	1.2655E-02
592666.62	4249530.04	7561.8088	1.08755	1.24E-02	7.56E-05	1.2433E-02
592656.21	4249464.21	7537.81138	1.02669	1.23E-02	7.14E-05	1.2390E-02
592621.64	4249381.21	7498.49656	1.18446	1.23E-02	8.23E-05	1.2337E-02
592650.08	4249442.47	7475.02356	1.03278	1.22E-02	7.18E-05	1.2288E-02
592667.96	4249501.45	7295.73871	0.99625	1.19E-02	6.92E-05	1.1992E-02
592665.5	4249487.11	7276.58017	0.9843	1.19E-02	6.84E-05	1.1960E-02
592670.65	4249512.01	7223.65069	0.99427	1.18E-02	6.91E-05	1.1874E-02
592664.66	4249471.29	7067.35911	0.94997	1.15E-02	6.60E-05	1.1616E-02
592536.95	4249264.35	6953.64054	2.1438	1.14E-02	1.49E-04	1.1513E-02
592623.09	4249372.58	6887.11917	1.11605	1.13E-02	7.76E-05	1.1333E-02
592677.77	4249519.75	6856.79054	0.93816	1.12E-02	6.52E-05	1.1271E-02
592673.95	4249494.19	6823.51879	0.91259	1.12E-02	6.34E-05	1.1215E-02
592672	4249480.61	6741.97935	0.89712	1.10E-02	6.23E-05	1.1080E-02
592616.58	4249358.85	6679.93672	1.14317	1.09E-02	7.94E-05	1.0996E-02
592678.7	4249503.34	6651.09418	0.88918	1.09E-02	6.18E-05	1.0931E-02
592631.54	4249379.66	6539.05689	1.02928	1.07E-02	7.15E-05	1.0758E-02
592548	4249273.7	6521.36976	1.90188	1.07E-02	1.32E-04	1.0790E-02
592638.07	4249388.59	6438.71401	0.98247	1.05E-02	6.83E-05	1.0591E-02
592658.82	4249429	6406.79398	0.88473	1.05E-02	6.15E-05	1.0532E-02
592684.99	4249512.8	6396.20826	0.85364	1.05E-02	5.93E-05	1.0512E-02
592680.45	4249487.69	6338.29458	0.83439	1.04E-02	5.80E-05	1.0416E-02
592536.93	4249253.04	6264.06058	1.98948	1.02E-02	1.38E-04	1.0375E-02
592687.06	4249495.91	6084.43437	0.7964	9.94E-03	5.53E-05	9.9988E-03
592658.82	4249416.26	6006.9272	0.84542	9.82E-03	5.88E-05	9.8755E-03
592651.54	4249400.97	5963.03677	0.87139	9.75E-03	6.06E-05	9.8056E-03
592547.56	4249264.77	5923.0968	1.8083	9.68E-03	1.26E-04	9.8055E-03
592536.77	4249239.81	5815.10966	1.84049	9.50E-03	1.28E-04	9.6312E-03
592655.28	4249403.53	5806.6292	0.84067	9.49E-03	5.84E-05	9.5479E-03
592695.42	4249504.89	5762.84195	0.74905	9.42E-03	5.21E-05	9.4700E-03
592621.98	4249349.85	5754.41543	1.01987	9.40E-03	7.09E-05	9.4750E-03
592630.08	4249360.2	5705.27847	0.96279	9.32E-03	6.69E-05	9.3907E-03
592673.74	4249434.09	5604.95763	0.75698	9.16E-03	5.26E-05	9.2125E-03
592537.06	4249228.77	5602.5731	1.72001	9.16E-03	1.20E-04	9.2755E-03
592667.67	4249419.32	5548.09036	0.76992	9.07E-03	5.35E-05	9.1204E-03
592663.74	4249410.61	5514.68173	0.7804	9.01E-03	5.42E-05	9.0666E-03
592648.16	4249379.8	5373.33263	0.83385	8.78E-03	5.80E-05	8.8393E-03
592561.86	4249273.48	5331.30066	1.53946	8.71E-03	1.07E-04	8.8196E-03
592676.12	4249426.4	5267.25001	0.71708	8.61E-03	4.98E-05	8.6578E-03
592548.79	4249247.87	5038.96934	1.61012	8.23E-03	1.12E-04	8.3468E-03
592555.45	4249259.86	5038.66198	1.56135	8.23E-03	1.09E-04	8.3429E-03
592545.51	4249235.85	4978.45661	1.58203	8.14E-03	1.10E-04	8.2460E-03
592686.28	4249434.22	4937.03896	0.65893	8.07E-03	4.58E-05	8.1141E-03
592670.1	4249400.68	4852.26953	0.69757	7.93E-03	4.85E-05	7.9783E-03
592548.35	4249227.68	4644.17093	1.45681	7.59E-03	1.01E-04	7.6910E-03
592573.6	4249274.71	4637.28775	1.3172	7.58E-03	9.15E-05	7.6700E-03
592687.1	4249422.06	4605.07432	0.62541	7.53E-03	4.35E-05	7.5693E-03
592565.47	4249263.73	4577.44361	1.38658	7.48E-03	9.64E-05	7.5770E-03
592560.37	4249246.98	4265.31053	1.36472	6.97E-03	9.48E-05	7.0654E-03
592556.8	4249234.76	4196.79487	1.34782	6.86E-03	9.37E-05	6.9523E-03
592584.52	4249274.71	4061.17132	1.14269	6.64E-03	7.94E-05	6.7164E-03
592568.82	4249254.06	4024.08888	1.26283	6.58E-03	8.78E-05	6.6641E-03
592576.4	4249263.73	3997.63215	1.20072	6.53E-03	8.34E-05	6.6166E-03
592564.38	4249228.04	3691.75209	1.18568	6.03E-03	8.24E-05	6.1156E-03
592594.72	4249274.35	3602.37892	1.00564	5.89E-03	6.99E-05	5.9571E-03
592575.67	4249248.44	3556.69072	1.12948	5.81E-03	7.85E-05	5.8910E-03
592586.6	4249263.37	3540.75336	1.0557	5.79E-03	7.34E-05	5.8598E-03
592572.83	4249235.12	3407.7912	1.10331	5.57E-03	7.67E-05	5.6458E-03
592584.12	4249255.52	3401.68967	1.0508	5.56E-03	7.30E-05	5.6322E-03
592731.75	4249431.89	3198.22097	0.4173	5.23E-03	2.90E-05	5.2557E-03
592576.03	4249229.13	3195.34595	1.03547	5.22E-03	7.20E-05	5.2939E-03
592605.28	4249273.62	3193.5896	0.8848	5.22E-03	6.15E-05	5.2806E-03
592581.24	4249239.14	3148.9512	1.01555	5.15E-03	7.06E-05	5.2167E-03
592597.16	4249262.64	3138.68805	0.9288	5.13E-03	6.46E-05	5.1939E-03
592586.13	4249246.32	3114.06119	0.98804	5.09E-03	6.87E-05	5.1578E-03
592740.2	4249438.97	3079.5479	0.39673	5.03E-03	2.76E-05	5.0603E-03
592594.91	4249253.73	2990.81252	0.92035	4.89E-03	6.40E-05	4.9517E-03
592739.38	4249428.21	2944.36602	0.38562	4.81E-03	2.68E-05	4.8386E-03
592732.8	4249413.21	2881.21432	0.38866	4.71E-03	2.70E-05	4.7356E-03

592747.83	4249435.29	2840.47005	0.36711	4.64E-03	2.55E-05	4.6675E-03
592592.19	4249239.37	2793.7173	0.89657	4.57E-03	6.23E-05	4.6279E-03
592741.25	4249420.29	2784.76005	0.36956	4.55E-03	2.57E-05	4.5767E-03
592608.74	4249262.14	2777.77111	0.81281	4.54E-03	5.65E-05	4.5960E-03
592590.24	4249231.32	2738.77427	0.88835	4.48E-03	6.17E-05	4.5376E-03
592729.91	4249396.37	2686.90929	0.37684	4.39E-03	2.62E-05	4.4173E-03
592599.71	4249245.52	2683.50448	0.84429	4.39E-03	5.87E-05	4.4442E-03
592749.64	4249422.95	2635.3368	0.34739	4.31E-03	2.41E-05	4.3309E-03
592738.36	4249403.45	2606.75906	0.35843	4.26E-03	2.49E-05	4.2850E-03
592608.16	4249252.6	2593.76214	0.79024	4.24E-03	5.49E-05	4.2938E-03
592758.09	4249430.03	2549.52779	0.33147	4.17E-03	2.30E-05	4.1896E-03
592603.77	4249236.25	2437.11949	0.78062	3.98E-03	5.43E-05	4.0371E-03
592753.59	4249413.21	2428.66414	0.32577	3.97E-03	2.26E-05	3.9917E-03
592601.16	4249229.5	2421.24548	0.78369	3.96E-03	5.45E-05	4.0114E-03
592642.68	4249282.31	2415.83876	0.60621	3.95E-03	4.21E-05	3.9902E-03
592729.12	4249377.16	2408.73122	0.35647	3.94E-03	2.48E-05	3.9612E-03
592651.14	4249289.39	2387.40766	0.56866	3.90E-03	3.95E-05	3.9411E-03
592742.01	4249392.95	2383.75061	0.33575	3.90E-03	2.33E-05	3.9190E-03
592611.01	4249244.27	2381.09285	0.74347	3.89E-03	5.17E-05	3.9430E-03
592636.68	4249274.16	2370.77144	0.62769	3.87E-03	4.36E-05	3.9180E-03
592762.04	4249420.29	2356.4525	0.31135	3.85E-03	2.16E-05	3.8727E-03
592737.57	4249384.24	2348.12349	0.33915	3.84E-03	2.36E-05	3.8610E-03
592750.46	4249400.03	2319.19783	0.32029	3.79E-03	2.23E-05	3.8124E-03
592723.85	4249363.48	2302.88164	0.35738	3.76E-03	2.48E-05	3.7883E-03
592754.38	4249404.26	2301.33942	0.31449	3.76E-03	2.19E-05	3.7828E-03
592732.31	4249370.56	2252.27361	0.33988	3.68E-03	2.36E-05	3.7044E-03
592762.83	4249411.34	2237.46416	0.3007	3.66E-03	2.09E-05	3.6775E-03
592742.27	4249380.06	2205.85268	0.3219	3.60E-03	2.24E-05	3.6273E-03
592612.96	4249231.92	2180.00521	0.69829	3.56E-03	4.85E-05	3.6112E-03
592652.88	4249280.12	2167.06178	0.54189	3.54E-03	3.77E-05	3.5792E-03
592756.48	4249396.11	2165.13059	0.30134	3.54E-03	2.09E-05	3.5593E-03
592750.72	4249387.14	2151.7369	0.30688	3.52E-03	2.13E-05	3.5378E-03
592636.13	4249261.55	2145.81347	0.60575	3.51E-03	4.21E-05	3.5489E-03
592661.33	4249287.2	2143.85321	0.50911	3.50E-03	3.54E-05	3.5390E-03
592719.9	4249347.14	2128.1351	0.35207	3.48E-03	2.45E-05	3.5024E-03
592733.85	4249362.69	2115.44332	0.3275	3.46E-03	2.28E-05	3.4799E-03
592644.58	4249268.63	2111.17126	0.56823	3.45E-03	3.95E-05	3.4897E-03
592764.93	4249403.19	2109.46705	0.28832	3.45E-03	2.00E-05	3.4674E-03
592728.35	4249354.22	2088.81447	0.33437	3.41E-03	2.32E-05	3.4369E-03
592742.3	4249369.77	2071.65087	0.31206	3.39E-03	2.17E-05	3.4073E-03
592725.36	4249343.13	1981.7818	0.33185	3.24E-03	2.31E-05	3.2618E-03
592656.52	4249271.75	1961.62561	0.5096	3.21E-03	3.54E-05	3.2412E-03
592733.81	4249350.21	1948.47635	0.31556	3.18E-03	2.19E-05	3.2062E-03
592664.98	4249278.83	1938.14253	0.47867	3.17E-03	3.33E-05	3.2007E-03
592633.21	4249242.25	1923.6206	0.58777	3.14E-03	4.08E-05	3.1845E-03
592745.17	4249361.38	1922.0854	0.29723	3.14E-03	2.07E-05	3.1618E-03
592753.62	4249368.46	1885.2566	0.28384	3.08E-03	1.97E-05	3.1007E-03
592641.67	4249249.33	1874.97316	0.55223	3.06E-03	3.84E-05	3.1025E-03
592646.33	4249254.27	1867.35849	0.53532	3.05E-03	3.72E-05	3.0889E-03
592654.78	4249261.35	1836.19424	0.50316	3.00E-03	3.50E-05	3.0358E-03
592723.18	4249328.56	1816.58972	0.32404	2.97E-03	2.25E-05	2.9913E-03
592731.63	4249335.64	1792.27419	0.30799	2.93E-03	2.14E-05	2.9504E-03
592743.57	4249348.23	1786.06822	0.28969	2.92E-03	2.01E-05	2.9390E-03
592632.85	4249225.13	1766.11027	0.56069	2.89E-03	3.90E-05	2.9252E-03
592752.02	4249355.31	1757.17499	0.27656	2.87E-03	1.92E-05	2.8909E-03
592641.3	4249232.21	1699.68138	0.52735	2.78E-03	3.66E-05	2.8143E-03
592646.69	4249238.97	1686.94867	0.51038	2.76E-03	3.55E-05	2.7924E-03
592655.14	4249246.05	1646.50818	0.48023	2.69E-03	3.34E-05	2.7242E-03
592733.01	4249324.56	1640.56858	0.29525	2.68E-03	2.05E-05	2.7016E-03
592741.46	4249331.64	1621.44555	0.2812	2.65E-03	1.95E-05	2.6694E-03
592647.78	4249228.04	1580.49323	0.49031	2.58E-03	3.41E-05	2.6170E-03
592725.72	4249309.99	1557.01199	0.30153	2.54E-03	2.10E-05	2.5655E-03
592734.18	4249317.07	1542.45564	0.2867	2.52E-03	1.99E-05	2.5407E-03
592656.23	4249235.12	1531.89378	0.46164	2.50E-03	3.21E-05	2.5356E-03
592743.57	4249324.56	1521.24356	0.27138	2.49E-03	1.89E-05	2.5049E-03
592752.02	4249331.64	1504.4775	0.25896	2.46E-03	1.80E-05	2.4767E-03
592654.7	4249222.21	1459.82943	0.45323	2.39E-03	3.15E-05	2.4172E-03
592663.15	4249229.29	1411.24608	0.42689	2.31E-03	2.97E-05	2.3360E-03
592745.76	4249312.54	1379.74719	0.259	2.25E-03	1.80E-05	2.2728E-03
592754.21	4249319.62	1366.83247	0.24695	2.23E-03	1.72E-05	2.2509E-03
CONCUNIT ug/	m^3					
DEPUNIT g/m^	2					

* AERMOD (1808	1): G:\Other\JJ	M\0001.0002 Vac	aville\Va	caville_\	Flagpole	\Flagpol	e.isc	8/28/2001	9
* AERMET (1413	4):							16:40:00	5
* MODELING OPTI	ONS USED: Reg	DFAULT CONC E	LEV FLGP	OL URBAN					
* PLOT	FILE OF ANNUAL	VALUES AVERAGED	ACROSS	5 YEARS	FOR SOUR	CE GROUP	: AREA		
* FOR A	TOTAL OF 208	RECEPTORS.							
* FORMA	T: (3(1X,F13.5)	,3(1X,F8.2),2X,	A6,2X,A8,	2X,I8.8,2	X,A8)				
* X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID
*									
592638.02	4249559.67	9098.39846	27.59	27.59	1.8	ANNUAL	AREA	5	
592628.22	4249549.14	9894.03134	27.59	27.59	1.8	ANNUAL	AREA	5	
592647.73	4249550.69	8635.08867	27.58	27.58	1.8	ANNUAL	AREA	5	
592639.57	4249537.78	9287.66932	27.55	27.55	1.8	ANNUAL	AREA	5	
592622.54	4249529.84	10644.80023	27.59	27.59	1.8	ANNUAL	AREA	5	
592635.03	4249509.4	9800.34574	27.49	27.49	1.8	ANNUAL	AREA	5	
592646.39	4249524.16	8892.02015	27.49	27.49	1.8	ANNUAL	AREA	5	
592666.62	4249530.04	7561.8088	27.49	27.49	1.8	ANNUAL	AREA	5	
592684.99	4249512.8	6396.20826	27.38	27.38	1.8	ANNUAL	AREA	5	
592667.96	4249501.45	7295.73871	27.39	27.39	1.8	ANNUAL	AREA	5	
592651.24	4249500.1	8465.93862	27.4	27.4	1.8	ANNUAL	AREA	5	
592649.79	4249474.19	8245.60539	27.4	27.4	1.8	ANNUAL	AREA	5	
592636.25	4249482.51	9562.88147	27.39	27.39	1.8	ANNUAL	AREA	5	
592626.05	4249471.59	10443.54545	27.39	27.39	1.8	ANNUAL	AREA	5	
592638.43	4249460.67	8983.15097	27.37	27.37	1.8	ANNUAL	AREA	5	
592627.15	4249451.2	9909.20471	27.38	27.38	1.8	ANNUAL	AREA	5	
592650.08	4249442.47	7475.02356	27.29	27.29	1.8	ANNUAL	AREA	5	
592673.74	4249434.09	5604.95763	27.21	27.21	1.8	ANNUAL	AREA	5	
592658.82	4249416.26	6006.9272	27.2	27.2	1.8	ANNUAL	AREA	5	
592658.82	4249429	6406.79398	27.27	27.27	1.8	ANNUAL	AREA	5	
592651.54	4249400.97	5963.03677	27.19	27.19	1.8	ANNUAL	AREA	5	
592638.07	4249388.59	6438.71401	27.19	27.19	1.8	ANNUAL	AREA	5	
592626.42	4249393.69	7693.65176	27.2	27.2	1.8	ANNUAL	AREA	5	
592609.98	4249527.8	11718.71547	27.6	27.6	1.8	ANNUAL	AREA	5	
592611.53	4249546.37	11108.91252	27.6	27.6	1.8	ANNUAL	AREA	5	
592657.03	4249538.94	8144.58704	27.49	27.49	1.8	ANNUAL	AREA	5	
592635.06	4249525.32	9724.6141	27.51	27.51	1.8	ANNUAL	AREA	5	
592624.53	4249515.73	10664.92218	27.51	27.51	1.8	ANNUAL	AREA	5	
592641.87	4249497.77	9197.5092	27.44	27.44	1.8	ANNUAL	AREA	5	
592645.89	4249511.7	8931.11289	27.48	27.48	1.8	ANNUAL	AREA	5	
592657.96	4249522.23	8092.83858	27.49	27.49	1.8	ANNUAL	AREA	5	
592659.51	4249508.91	7928.72305	27.44	27.44	1.8	ANNUAL	AREA	5	
592677.77	4249519.75	6856.79054	27.45	27.45	1.8	ANNUAL	AREA	5	
592629.48	4249538.94	9979.81567	27.59	27.59	1.8	ANNUAL	AREA	5	
592670.65	4249512.01	7223.65069	27.41	27.41	1.8	ANNUAL	AREA	5	
592695.42	4249504.89	5762.84195	27.38	27.38	1.8	ANNUAL	AREA	5	
592678.7	4249503.34	6651.09418	27.39	27.39	1.8	ANNUAL	AREA	5	
592687.06	4249495.91	6084.43437	27.35	27.35	1.8	ANNUAL	AREA	5	
592659.51	4249494.37	7794.70662	27.39	27.39	1.8	ANNUAL	AREA	5	
592652.08	4249489.1	8288.29866	27.39	27.39	1.8	ANNUAL	AREA	5	
592658.27	4249481.06	7699.35563	27.38	27.38	1.8	ANNUAL	AREA	5	
592673.95	4249494.19	6823.51879	27.4	27.4	1.8	ANNUAL	AREA	5	
592665.5	4249487.11	7276.58017	27.38	27.38	1.8	ANNUAL	AREA	5	
592680.45	4249487.69	6338.29458	27.35	27.35	1.8	ANNUAL	AREA	5	
592672	4249480.61	6741.97935	27.35	27.35	1.8	ANNUAL	AREA	5	
592664.66	4249471.29	7067.35911	27.29	27.29	1.8	ANNUAL	AREA	5	
592656.21	4249464.21	7537.81138	27.34	27.34	1.8	ANNUAL	AREA	5	
592648.57	4249492.33	8603.89413	27.39	27.39	1.8	ANNUAL	AREA	5	
592640.12	4249485.25	9240.82382	27.4	27.4	1.8	ANNUAL	AREA	5	
592649.81	4249481.19	8359.80516	27.4	27.4	1.8	ANNUAL	AREA	5	
592641.35	4249474.11	8973.28724	27.4	27.4	1.8	ANNUAL	AREA	5	
592613.9	4249452.09	11519.77768	27.4	27.4	1.8	ANNUAL	AREA	5	
592605.45	4249445.01	12514.28694	27.39	27.39	1.8	ANNUAL	AREA	5	
592634.02	4249466.95	9541.92622	27.39	27.39	1.8	ANNUAL	AREA	5	
592625.57	4249459.87	10288.56543	27.4	27.4	1.8	ANNUAL	AREA	5	
592605.23	4249458.28	12815.01255	27.39	27.39	1.8	ANNUAL	AREA	5	
592596.78	4249451.2	13976.7593	27.39	27.39	1.8	ANNUAL	AREA	5	
592623.8	4249441.88	10023.24175	27.34	27.34	1.8	ANNUAL	AREA	5	
592615.35	4249434.8	10827.30594	27.32	27.32	1.8	ANNUAL	AREA	5	
592650.12	4249453.33	7769.41228	27.3	27.3	1.8	ANNUAL	AREA	5	
592641.66	4249446.25	8314.73167	27.29	27.29	1.8	ANNUAL	AREA	5	
592629.99	4249432.59	9025.80601	27.29	27.29	1.8	ANNUAL	AREA	5	
592621.54	4249425.51	9701.65616	27.29	27.29	1.8	ANNUAL	AREA	5	
592609.56	4249413.4	10689.21673	27.29	27.29	1.8	ANNUAL	AREA	5	
592601.11	4249406.32	11554.05584	27.29	27.29	1.8	ANNUAL	AREA	5	
592600.9	4249419.59	12294.29264	27.3	27.3	1.8	ANNUAL	AREA	5	
592592.45	4249412.51	13381.37676	27.3	27.3	1.8	ANNUAL	AREA	5	
592594.71	4249425.16	13581.42831	27.36	27.36	1.8	ANNUAL	AREA	5	
592586.25	4249418.08	14862.18468	27.33	27.33	1.8	ANNUAL	AREA	5	
592581.72	4249433.38	16357.32331	27.4	27.4	1.8	ANNUAL	AREA	5	
592579.14	4249424.89	16652.01042	27.38	27.38	1.8	ANNUAL	AREA	5	
592598.11	4249443.43	13605.07394	27.4	27.4	1.8	ANNUAL	AREA	5	
592588.96	4249440.34	15112.10488	27.39	27.39	1.8	ANNUAL	AREA	5	
592609.26	4249435.38	11674.12918	27.34	27.34	1.8	ANNUAL	AREA	5	
592600.8	4249428.3	12686.19252	27.35	27.35	1.8	ANNUAL	AREA	5	
592676.12	4249426.4	5267.25001	27.19	27.19	1.8	ANNUAL	AREA	5	
592667.67	4249419.32	5548.09036	27.19	27.19	1.8	ANNUAL	AREA	5	
592663.74	4249410.61	5514.68173	27.19	27.19	1.8	ANNUAL	AREA	5	
592655.28	4249403.53	5806.6292	27.19	27.19	1.8	ANNUAL	AREA	5	
592631.54	4249379.66	6539.05689	27.2	27.2	1.8	ANNUAL	AREA	5	
592623.09	4249372.58	6887.11917	27.2	27.2	1.8	ANNUAL	AREA	5	
592621.64	4249381.21	7498.49656	27.19	27.19	1.8	ANNUAL	AREA	5	
592613.19	4249374.13	7941.34131	27.19	27.19	1.8	ANNUAL	AREA	5	
592617.61	4249391.11	8469.55276	27.22	27.22	1.8	ANNUAL	AREA	5	
592609.16	4249384.03	9034.02441	27.21	27.21	1.8	ANNUAL	AREA	5	
592740.2	4249438.97	3079.5479	27.16	27.16	1.8	ANNUAL	AREA	5	
592731.75	4249431.89	3198.22097	27.18	27.18	1.8	ANNUAL	AREA	5	
592747.83	4249435.29	2840.47005	27.14	27.14	1.8	ANNUAL	AREA	5	
592739.38	4249428.21	2944.36602	27.13	27.13	1.8	ANNUAL	AREA	5	
592758.09	4249430.03	2549.52779	27.12	27.12	1.8	ANNUAL	AREA	5	
592749.64	4249422.95	2635.3368	27.1	27.1	1.8	ANNUAL	AREA	5	
592762.04	4249420.29	2356.4525	27.09	27.09	1.8	ANNUAL	AREA	5	
592753.59	4249413.21	2428.66414	27.09	27.09	1.8	ANNUAL	AREA	5	
592741.25	4249420.29	2784.76005	27.12	27.12	1.8	ANNUAL	AREA	5	
592732.8	4249413.21	2881.21432	27.1	27.1	1.8	ANNUAL	AREA	5	
592738.36	4249403.45	2606.75906	27.09	27.09	1.8	ANNUAL	AREA	5	
592729.91	4249396.37	2686.90929	27.09	27.09	1.8	ANNUAL	AREA	5	
592750.46	4249400.03	2319.19783	27.09	27.09	1.8	ANNUAL	AREA	5	
592742.01	4249392.95	2383.75061	27.09	27.09	1.8	ANNUAL	AREA	5	
592764.93	4249403.19	2109.46705	27.09	27.09	1.8	ANNUAL	AREA	5	
592756.48	4249396.11	2165.13059	27.09	27.09	1.8	ANNUAL	AREA	5	
592762.83	4249411.34	2237.46416	27.09	27.09	1.8	ANNUAL	AREA	5	
592754.38	4249404.26	2301.33942	27.09	27.09	1.8	ANNUAL	AREA	5	
592750.72	4249387.14	2151.7369	27.08	27.08	1.8	ANNUAL	AREA	5	
592742.27	4249380.06	2205.85268	27.04	27.04	1.8	ANNUAL	AREA	5	
592737.57	4249384.24	2348.12349	27.06	27.06	1.8	ANNUAL	AREA	5	
592729.12	4249377.16	2408.73122	27.06	27.06	1.8	ANNUAL	AREA	5	
592732.31	4249370.56	2252.27361	27.02	27.02	1.8	ANNUAL	AREA	5	
592723.85	4249363.48	2302.88164	27.05	27.05	1.8	ANNUAL	AREA	5	
592742.3	4249369.77	2071.65087	26.99	26.99	1.8	ANNUAL	AREA	5	
592733.85	4249362.69	2115.44332	27	27	1.8	ANNUAL	AREA	5	
592753.62	4249368.46	1885.2566	26.99	26.99	1.8	ANNUAL	AREA	5	
592745.17	4249361.38	1922.0854	26.99	26.99	1.8	ANNUAL	AREA	5	
592752.02	4249355.31	1757.17499	26.99	26.99	1.8	ANNUAL	AREA	5	
592743.57	4249348.23	1786.06822	26.99	26.99	1.8	ANNUAL	AREA	5	

* AERMOD (1808	1): G:\Other\JJ	M\0001.0002 Va	caville\Va	caville_\	Flagpol	e\Flagpo	le.isc	8/28/2001	9
* AERMET (1413	4):							16:40:00	5
* MODELING OPTI	ONS USED: Reg	DFAULT CONC	ELEV FLGP	OL URBAN					
* PLOT	FILE OF ANNUAL	VALUES AVERAGE	D ACROSS	5 YEARS	FOR SOU	RCE GROU	P: LINE		
* FOR A	TOTAL OF 208	RECEPTORS.							
* FORMA	T: (3(1X,F13.5)	,3(1X,F8.2),2X	,A6,2X,A8,	2X,I8.8,2	X,A8)				
* X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID
*									
592638.02	4249559.67	1.63135	27.59	27.59	1.8	ANNUAL	LINE	5	
592628.22	4249549.14	1.80928	27.59	27.59	1.8	ANNUAL	LINE	5	
592647.73	4249550.69	1.41834	27.58	27.58	1.8	ANNUAL	LINE	5	
592639.57	4249537.78	1.52272	27.55	27.55	1.8	ANNUAL	LINE	5	
592622.54	4249529.84	1.86862	27.59	27.59	1.8	ANNUAL	LINE	5	
592635.03	4249509.4	1.50997	27.49	27.49	1.8	ANNUAL	LINE	5	
592646.39	4249524.16	1.35697	27.49	27.49	1.8	ANNUAL	LINE	5	
592666.62	4249530.04	1.08755	27.49	27.49	1.8	ANNUAL	LINE	5	
592684.99	4249512.8	0.85364	27.38	27.38	1.8	ANNUAL	LINE	5	
592667.96	4249501.45	0.99625	27.39	27.39	1.8	ANNUAL	LINE	5	
592651.24	4249500.1	1.20669	27.4	27.4	1.8	ANNUAL	LINE	5	
592649.79	4249474.19	1.14324	27.4	27.4	1.8	ANNUAL	LINE	5	
592636.25	4249482.51	1.38979	27.39	27.39	1.8	ANNUAL	LINE	5	
592626.05	4249471.59	1.54425	27.39	27.39	1.8	ANNUAL	LINE	5	
592638.43	4249460.67	1.26905	27.37	27.37	1.8	ANNUAL	LINE	5	
592627.15	4249451.2	1.43176	27.38	27.38	1.8	ANNUAL	LINE	5	
592650.08	4249442.47	1.03278	27.29	27.29	1.8	ANNUAL	LINE	5	
592673.74	4249434.09	0.75698	27.21	27.21	1.8	ANNUAL	LINE	5	
592658.82	4249416.26	0.84542	27.2	27.2	1.8	ANNUAL	LINE	5	
592658.82	4249429	0.88473	27.27	27.27	1.8	ANNUAL	LINE	5	
592651.54	4249400.97	0.87139	27.19	27.19	1.8	ANNUAL	LINE	5	
592638.07	4249388.59	0.98247	27.19	27.19	1.8	ANNUAL	LINE	5	
592626.42	4249393.69	1.17186	27.2	27.2	1.8	ANNUAL	LINE	5	
592609.98	4249527.8	2.22557	27.6	27.6	1.8	ANNUAL	LINE	5	
592611.53	4249546.37	2.27592	27.6	27.6	1.8	ANNUAL	LINE	5	
592657.03	4249538.94	1.23898	27.49	27.49	1.8	ANNUAL	LINE	5	
592635.06	4249525.32	1.56751	27.51	27.51	1.8	ANNUAL	LINE	5	
592624.53	4249515.73	1.76143	27.51	27.51	1.8	ANNUAL	LINE	5	
592641.87	4249497.77	1.34534	27.44	27.44	1.8	ANNUAL	LINE	5	
592645.89	4249511.7	1.32462	27.48	27.48	1.8	ANNUAL	LINE	5	
592657.96	4249522.23	1.17706	27.49	27.49	1.8	ANNUAL	LINE	5	
592659.51	4249508.91	1.11862	27.44	27.44	1.8	ANNUAL	LINE	5	
592677.77	4249519.75	0.93816	27.45	27.45	1.8	ANNUAL	LINE	5	
592629.48	4249538.94	1.73769	27.59	27.59	1.8	ANNUAL	LINE	5	
592670.65	4249512.01	0.99427	27.41	27.41	1.8	ANNUAL	LINE	5	
592695.42	4249504.89	0.74905	27.38	27.38	1.8	ANNUAL	LINE	5	
592678.7	4249503.34	0.88918	27.39	27.39	1.8	ANNUAL	LINE	5	
592687.06	4249495.91	0.7964	27.35	27.35	1.8	ANNUAL	LINE	5	
592659.51	4249494.37	1.07696	27.39	27.39	1.8	ANNUAL	LINE	5	
592652.08	4249489.1	1.15989	27.39	27.39	1.8	ANNUAL	LINE	5	
592658.27	4249481.06	1.05273	27.38	27.38	1.8	ANNUAL	LINE	5	
592673.95	4249494.19	0.91259	27.4	27.4	1.8	ANNUAL	LINE	5	
592665.5	4249487.11	0.9843	27.38	27.38	1.8	ANNUAL	LINE	5	
592680.45	4249487.69	0.83439	27.35	27.35	1.8	ANNUAL	LINE	5	
592672	4249480.61	0.89712	27.35	27.35	1.8	ANNUAL	LINE	5	
592664.66	4249471.29	0.94997	27.29	27.29	1.8	ANNUAL	LINE	5	
592656.21	4249464.21	1.02669	27.34	27.34	1.8	ANNUAL	LINE	5	
592648.57	4249492.33	1.22138	27.39	27.39	1.8	ANNUAL	LINE	5	
592640.12	4249485.25	1.3318	27.4	27.4	1.8	ANNUAL	LINE	5	
592649.81	4249481.19	1.16623	27.4	27.4	1.8	ANNUAL	LINE	5	
592641.35	4249474.11	1.27093	27.4	27.4	1.8	ANNUAL	LINE	5	
592613.9	4249452.09	1.72654	27.4	27.4	1.8	ANNUAL	LINE	5	
592605.45	4249445.01	1.90869	27.39	27.39	1.8	ANNUAL	LINE	5	
592634.02	4249466.95	1.36951	27.39	27.39	1.8	ANNUAL	LINE	5	
592625.57	4249459.87	1.50197	27.4	27.4	1.8	ANNUAL	LINE	5	
592605.23	4249458.28	1.99529	27.39	27.39	1.8	ANNUAL	LINE	5	
592596.78	4249451.2	2.21521	27.39	27.39	1.8	ANNUAL	LINE	5	
592623.8	4249441.88	1.45569	27.34	27.34	1.8	ANNUAL	LINE	5	
592615.35	4249434.8	1.60082	27.32	27.32	1.8	ANNUAL	LINE	5	
592650.12	4249453.33	1.06995	27.3	27.3	1.8	ANNUAL	LINE	5	
592641.66	4249446.25	1.16434	27.29	27.29	1.8	ANNUAL	LINE	5	
592629.99	4249432.59	1.29693	27.29	27.29	1.8	ANNUAL	LINE	5	
592621.54	4249425.51	1.4202	27.29	27.29	1.8	ANNUAL	LINE	5	
592609.56	4249413.4	1.60923	27.29	27.29	1.8	ANNUAL	LINE	5	
592601.11	4249406.32	1.772	27.29	27.29	1.8	ANNUAL	LINE	5	
592600.9	4249419.59	1.87243	27.3	27.3	1.8	ANNUAL	LINE	5	
592592.45	4249412.51	2.07161	27.3	27.3	1.8	ANNUAL	LINE	5	
592594.71	4249425.16	2.09629	27.36	27.36	1.8	ANNUAL	LINE	5	
592586.25	4249418.08	2.32928	27.33	27.33	1.8	ANNUAL	LINE	5	
592581.72	4249433.38	2.6396	27.4	27.4	1.8	ANNUAL	LINE	5	
592579.14	4249424.89	2.67102	27.38	27.38	1.8	ANNUAL	LINE	5	
592598.11	4249443.43	2.11784	27.4	27.4	1.8	ANNUAL	LINE	5	
592588.96	4249440.34	2.41201	27.39	27.39	1.8	ANNUAL	LINE	5	
592609.26	4249435.38	1.75024	27.34	27.34	1.8	ANNUAL	LINE	5	
592600.8	4249428.3	1.93406	27.35	27.35	1.8	ANNUAL	LINE	5	
592676.12	4249426.4	0.71708	27.19	27.19	1.8	ANNUAL	LINE	5	
592667.67	4249419.32	0.76992	27.19	27.19	1.8	ANNUAL	LINE	5	
592663.74	4249410.61	0.7804	27.19	27.19	1.8	ANNUAL	LINE	5	
592655.28	4249403.53	0.84067	27.19	27.19	1.8	ANNUAL	LINE	5	
592631.54	4249379.66	1.02928	27.2	27.2	1.8	ANNUAL	LINE	5	
592623.09	4249372.58	1.11605	27.2	27.2	1.8	ANNUAL	LINE	5	
592621.64	4249381.21	1.18446	27.19	27.19	1.8	ANNUAL	LINE	5	
592613.19	4249374.13	1.28931	27.19	27.19	1.8	ANNUAL	LINE	5	
592617.61	4249391.11	1.30847	27.22	27.22	1.8	ANNUAL	LINE	5	
592609.16	4249384.03	1.42999	27.21	27.21	1.8	ANNUAL	LINE	5	
592740.2	4249438.97	0.39673	27.16	27.16	1.8	ANNUAL	LINE	5	
592731.75	4249431.89	0.4173	27.18	27.18	1.8	ANNUAL	LINE	5	
592747.83	4249435.29	0.36711	27.14	27.14	1.8	ANNUAL	LINE	5	
592739.38	4249428.21	0.38562	27.13	27.13	1.8	ANNUAL	LINE	5	
592758.09	4249430.03	0.33147	27.12	27.12	1.8	ANNUAL	LINE	5	
592749.64	4249422.95	0.34739	27.1	27.1	1.8	ANNUAL	LINE	5	
592762.04	4249420.29	0.31135	27.09	27.09	1.8	ANNUAL	LINE	5	
592753.59	4249413.21	0.32577	27.09	27.09	1.8	ANNUAL	LINE	5	
592741.25	4249420.29	0.36956	27.12	27.12	1.8	ANNUAL	LINE	5	
592732.8	4249413.21	0.38866	27.1	27.1	1.8	ANNUAL	LINE	5	
592738.36	4249403.45	0.35843	27.09	27.09	1.8	ANNUAL	LINE	5	
592729.91	4249396.37	0.37684	27.09	27.09	1.8	ANNUAL	LINE	5	
592750.46	4249400.03	0.32029	27.09	27.09	1.8	ANNUAL	LINE	5	
592742.01	4249392.95	0.33575	27.09	27.09	1.8	ANNUAL	LINE	5	
592764.93	4249403.19	0.28832	27.09	27.09	1.8	ANNUAL	LINE	5	
592756.48	4249396.11	0.30134	27.09	27.09	1.8	ANNUAL	LINE	5	
592762.83	4249411.34	0.3007	27.09	27.09	1.8	ANNUAL	LINE	5	
592754.38	4249404.26	0.31449	27.09	27.09	1.8	ANNUAL	LINE	5	
592750.72	4249387.14	0.30688	27.08	27.08	1.8	ANNUAL	LINE	5	
592742.27	4249380.06	0.3219	27.04	27.04	1.8	ANNUAL	LINE	5	
592737.57	4249384.24	0.33915	27.06	27.06	1.8	ANNUAL	LINE	5	
592729.12	4249377.16	0.35647	27.06	27.06	1.8	ANNUAL	LINE	5	
592732.31	4249370.56	0.33988	27.02	27.02	1.8	ANNUAL	LINE	5	
592723.85	4249363.48	0.35738	27.05	27.05	1.8	ANNUAL	LINE	5	
592742.3	4249369.77	0.31206	26.99	26.99	1.8	ANNUAL	LINE	5	
592733.85	4249362.69	0.3275	27	27	1.8	ANNUAL	LINE	5	
592753.62	4249368.46	0.28384	26.99	26.99	1.8	ANNUAL	LINE	5	
592745.17	4249361.38	0.29723	26.99	26.99	1.8	ANNUAL	LINE	5	
592752.02	4249355.31	0.27656	26.99	26.99	1.8	ANNUAL	LINE	5	
592743.57	4249348.23	0.28969	26.99	26.99	1.8	ANNUAL	LINE	5	

592733.81	4249350.21	1948.47635	26.99	26.99	1.8	ANNUAL	AREA	5
592725.36	4249343.13	1981.7818	26.99	26.99	1.8	ANNUAL	AREA	5
592731.63	4249335.64	1792.27419	26.99	26.99	1.8	ANNUAL	AREA	5
592723.18	4249328.56	1816.58972	26.99	26.99	1.8	ANNUAL	AREA	5
592741.46	4249331.64	1621.44555	26.99	26.99	1.8	ANNUAL	AREA	5
592733.01	4249324.56	1640.56858	26.99	26.99	1.8	ANNUAL	AREA	5
592752.02	4249331.64	1504.4775	26.99	26.99	1.8	ANNUAL	AREA	5
592743.57	4249324.56	1521.24356	26.98	26.98	1.8	ANNUAL	AREA	5
592754.21	4249319.62	1366.83247	26.97	26.97	1.8	ANNUAL	AREA	5
592745.76	4249312.54	1379.74719	26.92	26.92	1.8	ANNUAL	AREA	5
592734.18	4249317.07	1542.45564	26.98	26.98	1.8	ANNUAL	AREA	5
592725.72	4249309.99	1557.01199	26.98	26.98	1.8	ANNUAL	AREA	5
592728.35	4249354.22	2088.81447	27	27	1.8	ANNUAL	AREA	5
592719.9	4249347.14	2128.1351	27	27	1.8	ANNUAL	AREA	5
592548	4249273.7	6521.36976	26.99	26.99	1.8	ANNUAL	AREA	5
592536.95	4249264.35	6953.64054	26.99	26.99	1.8	ANNUAL	AREA	5
592561.86	4249273.48	5331.30066	26.99	26.99	1.8	ANNUAL	AREA	5
592547.56	4249264.77	5923.0968	26.99	26.99	1.8	ANNUAL	AREA	5
592573.6	4249274.71	4637.28775	26.99	26.99	1.8	ANNUAL	AREA	5
592565.47	4249263.73	4577.44361	26.99	26.99	1.8	ANNUAL	AREA	5
592584.52	4249274.71	4061.17132	26.99	26.99	1.8	ANNUAL	AREA	5
592576.4	4249263.73	3997.63215	26.99	26.99	1.8	ANNUAL	AREA	5
592594.72	4249274.35	3602.37892	26.99	26.99	1.8	ANNUAL	AREA	5
592586.6	4249263.37	3540.75336	26.99	26.99	1.8	ANNUAL	AREA	5
592605.28	4249273.62	3193.5896	26.99	26.99	1.8	ANNUAL	AREA	5
592597.16	4249262.64	3138.68805	26.97	26.97	1.8	ANNUAL	AREA	5
592594.91	4249253.73	2990.81252	26.9	26.9	1.8	ANNUAL	AREA	5
592586.13	4249246.32	3114.06119	26.9	26.9	1.8	ANNUAL	AREA	5
592584.12	4249255.52	3401.68967	26.97	26.97	1.8	ANNUAL	AREA	5
592575.67	4249248.44	3556.69072	26.93	26.93	1.8	ANNUAL	AREA	5
592568.82	4249254.06	4024.08888	26.98	26.98	1.8	ANNUAL	AREA	5
592560.37	4249246.98	4265.31053	26.92	26.92	1.8	ANNUAL	AREA	5
592548.79	4249247.87	5038.96934	26.93	26.93	1.8	ANNUAL	AREA	5
592536.77	4249239.81	5815.10966	26.93	26.93	1.8	ANNUAL	AREA	5
592545.51	4249235.85	4978.45661	26.89	26.89	1.8	ANNUAL	AREA	5
592537.06	4249228.77	5602.5731	26.89	26.89	1.8	ANNUAL	AREA	5
592556.8	4249234.76	4196.79487	26.89	26.89	1.8	ANNUAL	AREA	5
592548.35	4249227.68	4644.17093	26.89	26.89	1.8	ANNUAL	AREA	5
592572.83	4249235.12	3407.7912	26.89	26.89	1.8	ANNUAL	AREA	5
592564.38	4249228.04	3691.75209	26.89	26.89	1.8	ANNUAL	AREA	5
592581.24	4249239.14	3148.9512	26.89	26.89	1.8	ANNUAL	AREA	5
592576.03	4249229.13	3195.34595	26.89	26.89	1.8	ANNUAL	AREA	5
592592.19	4249239.37	2793.7173	26.89	26.89	1.8	ANNUAL	AREA	5
592590.24	4249231.32	2738.77427	26.89	26.89	1.8	ANNUAL	AREA	5
592603.77	4249236.25	2437.11949	26.89	26.89	1.8	ANNUAL	AREA	5
592601.16	4249229.5	2421.24548	26.89	26.89	1.8	ANNUAL	AREA	5
592608.16	4249252.6	2593.76214	26.89	26.89	1.8	ANNUAL	AREA	5
592599.71	4249245.52	2683.50448	26.89	26.89	1.8	ANNUAL	AREA	5
592651.14	4249289.39	2387.40766	26.99	26.99	1.8	ANNUAL	AREA	5
592642.68	4249282.31	2415.83876	26.99	26.99	1.8	ANNUAL	AREA	5
592661.33	4249287.2	2143.85321	26.99	26.99	1.8	ANNUAL	AREA	5
592652.88	4249280.12	2167.06178	26.99	26.99	1.8	ANNUAL	AREA	5
592664.98	4249278.83	1938.14253	26.99	26.99	1.8	ANNUAL	AREA	5
592656.52	4249271.75	1961.62561	26.95	26.95	1.8	ANNUAL	AREA	5
592654.78	4249261.35	1836.19424	26.9	26.9	1.8	ANNUAL	AREA	5
592646.33	4249254.27	1867.35849	26.89	26.89	1.8	ANNUAL	AREA	5
592655.14	4249246.05	1646.50818	26.89	26.89	1.8	ANNUAL	AREA	5
592646.69	4249238.97	1686.94867	26.89	26.89	1.8	ANNUAL	AREA	5
592644.58	4249268.63	2111.17126	26.98	26.98	1.8	ANNUAL	AREA	5
592636.13	4249261.55	2145.81347	26.95	26.95	1.8	ANNUAL	AREA	5
592656.23	4249235.12	1531.89378	26.89	26.89	1.8	ANNUAL	AREA	5
592647.78	4249228.04	1580.49323	26.89	26.89	1.8	ANNUAL	AREA	5
592663.15	4249229.29	1411.24608	26.89	26.89	1.8	ANNUAL	AREA	5
592654.7	4249222.21	1459.82943	26.87	26.87	1.8	ANNUAL	AREA	5
592641.3	4249232.21	1699.68138	26.89	26.89	1.8	ANNUAL	AREA	5
592632.85	4249225.13	1766.11027	26.89	26.89	1.8	ANNUAL	AREA	5
592641.67	4249249.33	1874.97316	26.89	26.89	1.8	ANNUAL	AREA	5
592633.21	4249242.25	1923.6206	26.89	26.89	1.8	ANNUAL	AREA	5
592536.28	4249274.16	7912.3284	26.99	26.99	1.8	ANNUAL	AREA	5
592536.93	4249253.04	6264.06058	26.98	26.98	1.8	ANNUAL	AREA	5
592555.45	4249259.86	5038.66198	26.99	26.99	1.8	ANNUAL	AREA	5
592608.74	4249262.14	2777.77111	26.96	26.96	1.8	ANNUAL	AREA	5
592636.68	4249274.16	2370.77144	26.99	26.99	1.8	ANNUAL	AREA	5
592611.01	4249244.27	2381.09285	26.89	26.89	1.8	ANNUAL	AREA	5
592612.96	4249231.92	2180.00521	26.89	26.89	1.8	ANNUAL	AREA	5
592570	4249420.28	18662.33293	27.4	27.4	1.8	ANNUAL	AREA	5
592581.73	4249409.48	15353.99627	27.3	27.3	1.8	ANNUAL	AREA	5
592588.31	4249393.04	12877.25939	27.3	27.3	1.8	ANNUAL	AREA	5
592582.91	4249403.37	14713.67258	27.29	27.29	1.8	ANNUAL	AREA	5
592589.25	4249431.54	14813.58534	27.4	27.4	1.8	ANNUAL	AREA	5
592597.23	4249435.3	13520.93328	27.39	27.39	1.8	ANNUAL	AREA	5
592610.85	4249423.33	10980.36544	27.29	27.29	1.8	ANNUAL	AREA	5
592616.72	4249466.53	11433.55395	27.39	27.39	1.8	ANNUAL	AREA	5
592627.28	4249441.17	9607.24527	27.33	27.33	1.8	ANNUAL	AREA	5
592616.58	4249358.85	6679.93672	27.17	27.17	1.8	ANNUAL	AREA	5
592630.08	4249360.2	5705.27847	27.13	27.13	1.8	ANNUAL	AREA	5
592621.98	4249349.85	5754.41543	27.11	27.11	1.8	ANNUAL	AREA	5
592670.1	4249400.68	4852.26953	27.2	27.2	1.8	ANNUAL	AREA	5
592620.53	4249411.57	9198.98341	27.3	27.3	1.8	ANNUAL	AREA	5
592636.28	4249425.38	8126.73529	27.29	27.29	1.8	ANNUAL	AREA	5
592648.16	4249379.8	5373.33263	27.17	27.17	1.8	ANNUAL	AREA	5
592686.28	4249434.22	4937.03896	27.2	27.2	1.8	ANNUAL	AREA	5
592687.1	4249422.06	4605.07432	27.19	27.19	1.8	ANNUAL	AREA	5

** CONCUNIT ug/ m^3
** DEPUNIT g/m^ 2

592733.81	4249350.21	0.31556	26.99	26.99	1.8	ANNUAL	LINE	5
592725.36	4249343.13	0.33185	26.99	26.99	1.8	ANNUAL	LINE	5
592731.63	4249335.64	0.30799	26.99	26.99	1.8	ANNUAL	LINE	5
592723.18	4249328.56	0.32404	26.99	26.99	1.8	ANNUAL	LINE	5
592741.46	4249331.64	0.2812	26.99	26.99	1.8	ANNUAL	LINE	5
592733.01	4249324.56	0.29525	26.99	26.99	1.8	ANNUAL	LINE	5
592752.02	4249331.64	0.25896	26.99	26.99	1.8	ANNUAL	LINE	5
592743.57	4249324.56	0.27138	26.98	26.98	1.8	ANNUAL	LINE	5
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592687.1	4249422.06	0.62541	27.19	27.19	1.8	ANNUAL	LINE	5

** CONCUNIT ug/ m^3
** DEPUNIT g/m^ 2

APPENDIX D

Biological Resources Technical Report

Home 2 Suites Hotel Project

Biological Resources Technical Report

September 2019

Prepared for:
City of Vacaville
Community Development Department
650 Merchant Street
Vacaville, CA 95688

Prepared by:

Consulting Services Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

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1.0 INTRODUCTION

This Biological Resources Technical Report (BRTR) has been prepared to evaluate the potential effects on sensitive biological resources that may occur near the proposed Home 2 Suites Hotel Project (Project). Ark Studio Inc. (Applicant) is proposing to develop the Project in the City of Vacaville (City), Solano County (County), California. The proposed Project would be located on assessor's parcel number (APN) 0133-120-380 within the Vaca Valley Business Park Policy Plan area. The applicant is proposing to subdivide this parcel and construct a four-story hotel on approximately 2.26 acres. The proposed hotel would include 107 guest rooms and provide other onsite guest amenities including, an indoor swimming pool, fitness room, and dining/gathering area. The proposed Project also includes 135 onsite surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities.

The proposed Project site is located northeast of the City, near the intersection of New Horizons Way and East Akerly Drive. The proposed Project site is within the Vaca Valley Business Park Policy Plan area, which is bordered by Interstate-505 (I-505) to the west, Interstate-80 (I-80) to the south and east, and Vaca Valley Parkway to the north (Figure 1). The Nut Tree Airport is approximately 1.25 miles southwest of the proposed Project site.

This BRTR is based on information gathered from a review of desktop resources including existing literature, data, and maps; and from a reconnaissance-level field survey of the study area by Stantec Consulting Services Inc. (Stantec) biologist. The study area for this BRTR encompasses approximately six acres and a 100-foot buffer from the proposed Project area. The study area includes all proposed Project components and potential staging and ground disturbance areas.

The overall purpose of this BRTR is to:

- Characterize the habitats and vegetation communities present;
- Evaluate the potential for special-status plant and animal species to occur;
- Provide the locations and approximate boundaries of potential Waters of the United States (WOTUS); and
- Determine potential impacts on biological resources resulting from localized construction activities, and temporary stockpiling of construction materials.

2.0 PROJECT DESCRIPTION

2.1 PROJECT PURPOSE

The purpose of the proposed Project is to develop a four-story hotel of 56,651 square feet on an approximately 2.26-acre site within the Vaca Valley Business Park Policy Plan area.

2.2 DESCRIPTION OF PROJECT

The proposed Project site consists of APN 0133-120-380 within the Vaca Valley Business Park Policy Plan area at the intersection of New Horizons Way and East Akerly Drive. The applicant is proposing to subdivide this 3.41-acre parcel and construct a four-story hotel on approximately 2.26 acres. The proposed hotel would include 107 guest rooms and other onsite guest amenity areas such as, an indoor swimming pool, fitness room, and dining/community gathering room. The proposed Project would also provide 135 onsite surface parking spaces, approximately 30,959 square feet of landscaping, and installation of utilities.

2.3 PROJECT COMPONENTS

2.3.1 Hotel Building

The proposed Project involves development of a four-story hotel building with up to 107 guest rooms. The proposed building would be approximately 43 feet tall and have a total building area of 56,651 square feet. The proposed hotel building would be constructed on 2.26 acres.

Hotel guest rooms would be provided on the first through fourth floors. The first floor would be approximately 15,407 square feet and include 17 rooms consisting of 10 queen studio rooms, five accessible queen studio rooms, one queen one-bedroom, and one accessible queen one-bedroom. The first floor would also include the main lobby reception area, fitness room, dining/community gathering area, indoor pool, guest laundry, and employee office. The second, third, and fourth floors would each be approximately 13,784 square feet and have 30 rooms consisting of 21 queen studio rooms, six accessible queen studio rooms, one queen one-bedroom, and one accessible queen one-bedroom, each.

The main entrance and exit would be provided on the north side of the building. Additional exits would be provided on the west and south sides of the building. These exits would be secured and only accessible to hotel guests. Access to each floor would be available from the elevators on the east side of the building. Stairwells would also be provided on the east and west sides of the building to access each floor.

2.3.2 Site Access, Circulation, and Parking

The proposed Project would construct two 26-foot wide driveways at the north and south ends of the site, on East Akerly Drive. Vehicles would be able to enter or exit the proposed Project site from either driveway on East Akerly Drive.

The proposed Project would provide 135 parking spaces consisting of 49 standard parking spaces, 80 compact spaces, five accessible spaces, and one van parking space. The proposed Project would reserve 10 parking spaces

for clean air vehicles, and eight parking spaces would be equipped with electric vehicle charging stations. The proposed Project would also install two bicycle racks near the hotel's south building entrance. Each bicycle rack would accommodate at least five bicycles, as required by Chapter 14.09.128 of the Vacaville Municipal Code.

Site improvements would be installed along East Akerly Drive and throughout the proposed Project site, consisting of curbs, gutters, sidewalks for pedestrian access, signing, lighting, and striping.

2.3.3 Landscaping

The proposed Project would provide approximately 30,959 square feet of landscaping around the site perimeter and within the parking area. Landscaping design and installation for the proposed Project would be required to conform to the development criteria of the Vaca Valley Business Park Policy Plan and the City's Water Efficient Landscape Ordinance, Chapter 14.27 of the Vacaville Municipal Code.

2.3.4 Lighting

The proposed Project would provide exterior lighting in the new parking lot and in areas that highlight the building's entrances, walkways, and landscaping features. Parking lot lighting would include standard parking lot fixtures up to 20-feet in height and shielded to reduce light spill or glare into surrounding buildings in accordance with Chapter 14.09.127.110 of the Vacaville Municipal Code. Additionally, all exterior lighting would be designed to meet safety requirements and energy conservations needs as required by the Vaca Valley Business Park Policy Plan. The applicant would submit a Photometric Plan to the City during the design review phase to ensure the proposed Project complies with the City requirements.

2.3.5 Utilities

Water

The proposed Project would install a new 3-inch water line extension to connect to the existing 18-inch water line in East Akerly Drive. The proposed Project would also install a new 8-inch water line for fire suppression. The Vaca Valley Business Park Policy Plan determined adequate off-site water capacity will be available to serve the Policy Plan area based on the maximum water demand of 3,000 gpd per acre. The proposed Project is expected to demand 292,566 gallons per day (gpd) of potable water.

Wastewater

The proposed Project would install a new 6-inch sanitary sewer lateral to connect to the existing 12-inch sanitary sewer main in East Akerly Drive. In addition, an existing 12-inch sanitary sewer main that crosses the southwest portion of the proposed Project site would be abandoned in place. The proposed Project is expected to generate approximately 10,272 gallons per day (gpd) of wastewater (i.e., 107 units x [240 gpd/unit x 0.4 equivalent dwelling unit]).

Stormwater Treatment

The proposed Project would install a new 12-inch storm drain along the property boundary and connect to the existing 24-inch storm drain along East Akerly Drive. The proposed Project would create 78,253 square feet of new impervious surface; it would also include approximately 17,356 square feet of pervious surface, consisting of



landscaping and bioswales along the proposed Project site boundary. The bioswales would collect impervious surface runoff prior to entering the piped storm drain system.

Electricity and Natural Gas

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the proposed Project site. Electrical and gas connections would be made with existing facilities located onsite.

2.4 PROJECT CONSTRUCTION

2.4.1 Construction Schedule

It is currently anticipated that proposed Project construction would take approximately 12 months to complete, starting in January 2020 and ending in January 2021. The proposed Project would require up to 15 workers during the peak construction phase. It is anticipated that the construction workforce would be available in nearby areas. The proposed Project construction and grading activities would be consistent with the Vacaville Municipal Code and occur between 7:00 a.m. and 5:00 p.m., Monday through Friday. The proposed Project construction and grading activities would not occur on Saturdays, Sundays, or holidays. Construction hauling would be limited to between 7:00 a.m. and 6:00 p.m. on weekdays.

2.4.2 Construction Equipment, Access, and Staging Areas

The proposed Project would require the use of heavy construction equipment for site work and construction of the hotel building. Construction equipment would include, but not be limited to, scrapers, water trucks, grading blades, motor graders, forklifts, skip loaders, backhoes, excavators, and loaders. The proposed Project construction equipment and materials would be stored onsite, or on the undeveloped area north of the proposed Project site, adjacent to New Horizons Way. Construction activities are anticipated to be confined to the proposed Project site and no road closures or detours are anticipated.

2.4.3 Construction Activities

Construction activities associated with the proposed Project include site clearing, grading, utility connections (e.g., new lateral connections to the existing water, sewer, and storm drain mains in East Akerly Drive), building construction, frontage improvements (e.g., new curb, gutter, sidewalk and driveway construction), and landscaping on the site. Construction activities would involve grading of the entire proposed Project site and the permanent disturbance of the 2.26-acre site. The estimated amount of cut and fill during proposed Project construction would be 3,000 and 1,000 cubic yards, respectively. The proposed Project is not expected to export soil offsite or import soil onsite during construction. The proposed Project would result in approximately 78,253 square feet of impervious area.

3.0 METHODS

The analysis presented in this BRTR includes a review of existing information about sensitive biological resources known to occur near the proposed Project and followed by field surveys to determine whether the biological resources are absent, present, and/or are likely to be present.

3.1 DEFINITIONS

3.1.1 Special-Status Species and Sensitive Communities

For the purpose of this evaluation, "special-status" plant species include plants that are: 1) listed as threatened or endangered under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA); 2) proposed for federal listing as threatened or endangered; 3) State or federal candidate species; 4) designated as rare by the California Department of Fish and Wildlife (CDFW); or 5) California Rare Plant Rank (CRPR) 1A, 1B, 2A or 2B species. Special-status animal species include species that are: 1) listed as threatened or endangered under the CESA or FESA; 2) proposed for federal listing as threatened or endangered; 3) state or federal candidate species; or 4) identified by the CDFW as species of special concern or fully protected species.

Sensitive natural communities are those communities that are of highly limited in distribution, and may or may not contain rare, threatened, or endangered species. The California Natural Diversity Database (CNDDB) ranks natural communities according to their rarity and endangerment in California. Habitats are considered "sensitive" if they are identified on the CDFW List of Vegetation Alliances and Associations as being highly imperiled or classified by CDFW in the CNDDB as natural communities of special concern – Ranks S1 to S3.

3.1.2 Potential to Occur

The potential for special-status species to occur within the study area, which is defined as a 100-foot buffer around the proposed Project area (Figure 2), were classified under one of five categories as described below. Only those special-status species with an occurrence potential of "Moderate" or greater are evaluated in detail.

- **Present:** The species is known to be present or has been recently observed in the study area.
- **High:** The species has been observed and documented within five miles of the study area within the last five years and suitable habitat for the species is present.
- **Moderate:** The proposed Project is located within the range of the species, there are documented occurrences within five miles of the study area, and/or potential habitat for the species exists in the study area.
- **Low:** The proposed Project is located within the range of the species and low-quality (e.g., disturbed, agricultural) habitat is present.
- **Absent:** The proposed Project area is located outside of the species range and/or potential habitat to support the species is not present in the study area.
- **Not Present:** Potential habitat for the species is present in the study area; however, the species has been determined to be absent from the study area given the results of focused/protocol-level survey(s).

3.2 LITERATURE AND DATABASE REVIEW

A CNDDB and CNPS database search for special-status species typically includes nine U.S. Geological Survey 7.5-minute quadrangle maps for a small Project located within a single quadrangle—the quadrangle that covers the study area, and the eight quadrangles that surround the Project quadrangle. In this case, the *Allendale, Mount Vaca, Dixon, Dozier, Elmira and Fairfield North* topographic quadrangles, within a 5-mile radius of the study area were queried.

Other information sources consulted to determine which special-status species could potentially occur in the study area included:

- United States Geological Survey (USGS) California 7.5-minute topographic quadrangles for *Allendale, Mount Vaca, Dixon, Dozier, Elmira and Fairfield North*;
- Aerial photographs of the study area and surrounding vicinity (Google Earth 2019);
- United States Fish and Wildlife Service (USFWS) list of endangered and threatened species that may occur in the study area (USFWS 2019a) (Appendix A);
- USFWS Designated Critical Habitat (USFWS 2019a)
- USFWS National Wetlands Inventory (USFWS 2019b)
- The CDFW CNDDB plant and animal records within five miles of the study area (CDFW 2019a) (Appendix A);
- *Special Animals List* (CDFW 2019b);
- *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2019c)
- *State and Federally Listed Endangered, Threatened and Rare Plants of California* (CDFW 2019d);
- *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2019e).
- The California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Plants* (CNPS 2019) records for Solano County, California (Appendix A);
- California Wildlife Habitat Relationships System (WHRS) (CDFW 2014); and
- Other pertinent databases and literature, including *The Jepson Manual: Vascular Plants of California*, *Second Edition* (Baldwin et. al. 2012).

Based on this background research, a list of special-status species that have the potential to occur or are known to occur in the study area and vicinity was developed. The list was refined based on reconnaissance-level biological field surveys to determine the potential for those species to occur in the study area.

3.3 FIELD SURVEYS CONDUCTED

A reconnaissance-level biological surveys was conducted by Stantec Senior Biologist Jared Elia on August 23, 2019. The reconnaissance-level survey was performed on foot walking meandering transects throughout the entire study area to characterize habitats, identify aquatic resources that may be subject to regulatory agency jurisdiction (e.g.,

United States Army Corps of Engineers [USACE], CDFW), assess potential for special-status species to occur, and to record observed species. To better focus the field survey efforts on those plant and animal special-status species that may occur in the study area, a target list of potentially occurring species was developed during the literature and database review process. Plant taxonomy for the botanical survey uses the Jepson Manual (Baldwin et al. 2012).



4.0 REGULATORY CONTEXT

4.1 FEDERAL REGULATORY REQUIREMENTS

4.1.1 Federal Endangered Species Act

The FESA of 1973 was established to protect and recover endangered and threatened species and the ecosystems upon which they depend. According to the FESA "endangered" indicates a species is in danger of extinction throughout all or a significant portion of its range. In addition, the FESA defines a species as "threatened" if that species is likely to become endangered within the foreseeable future. The USFWS maintains a list of endangered and threatened species. The USFWS and the National Marine Fisheries Service (NMFS) administer FESA and are responsible for consulting with other federal agencies pursuant to FESA. Consultation with the USFWS would be necessary if a proposed project action has the potential to affect federally listed species, their habitat, as well as areas of Designated Critical Habitat (DCH). This consultation would proceed under Section 7 of the FESA if a federal action is part of the project action, or proceed through Section 10 of the FESA if no such nexus were available

4.1.2 Clean Water Act

The objective of the Clean Water Act (CWA) of 1977, as amended, is to maintain and restore the chemical, physical, and biological integrity of the nation's waters. The discharge of dredged or fill material into WOTUS, including jurisdictional wetlands, is regulated under Section 404 of the CWA by the (USACE) via a permitting process. Surface water quality is further regulated by the United State Environmental Protection Agency (USEPA); which in California this authority is delegated to the State Water Resources Control Board (SWRCB) or the Regional Water Quality Control Board (RWQCB). Applicants for Section 404 permits are also required to comply with Section 401 of the CWA by obtaining Water Quality Certification (WQC) through the State.

4.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. This treaty prohibits "take," which has been variously defined to include harming any migratory bird listed under the MBTA, including nests, eggs, and/or young.

4.1.4 Executive Orders

Federal agencies are required to demonstrate that their actions comply with Presidential Executive Orders established to protect the environment. Relevant Executive Orders include the following:

- **Executive Order 11990 (Wetlands):** For Projects that could affect wetlands, federal agencies are required to demonstrate that no practicable alternative exists to avoid the wetland(s) and that all practicable avoidance, mitigation, and/or preservation measures have been incorporated into a project to minimize impacts to wetlands. Federal agencies are also required to provide opportunity for early public review of any plans or proposals for new construction in wetlands.
- **Executive Order 11988 (Floodplain Management):** For projects that may be located in a floodplain, federal agencies are required to evaluate the effects of the action on the floodplain and identify practicable alternatives



or measures to avoid long- and short-term adverse impacts associated with the occupancy and modification of the floodplain and to avoid incompatible development in the floodplain.

- **Executive Order 13112 (Invasive Species):** Federal agencies are required to prevent the introduction of invasive species and not authorize actions that could cause or promote the introduction or spread of invasive species. Federal agencies need to identify feasible and prudent measures to minimize the risk of harm caused by invasive species.

- **Executive Order 13186 (Migratory Birds):** Federal agencies are required to evaluate the effects of their actions on migratory birds, with emphasis on species of concern, and to minimize the take of migratory birds through development of procedures for evaluating such take and conservation efforts in coordination with the USFWS. This Executive Order further implements the MBTA and requires coordination between the USFWS and federal agencies.

4.2 CALIFORNIA REGULATORY REQUIREMENTS

4.2.1 California Endangered Species Act

The CESA prohibits "take" of plants or animals listed as endangered or threatened and protects native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, that are threatened with extinction or experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation. "Take" is defined in Section 86 of the California Fish and Game Code (FGC) as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA authorizes the CDFW to issue incidental take permits for state-listed species, when specific criteria are met.

4.2.2 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne), Section 1601 to 1602 pf the California FGC, authorizes the SWRCB to oversee water rights and water quality policy, and as such has established nine RWQCBs to protect and enhance water quality at the regional and local levels. In addition to preparing WQCs to designate beneficial uses of water bodies in each region, the RWQCBs issue a permit, referred to as a Waste Discharge Requirement (WDR), for activities that result in pollutant or nuisance discharges that may affect surface or groundwater, including isolated wetlands not subject to the jurisdiction of the USACE.

4.2.3 California Fish and Game Code

The California FGC has several provisions for the protection of Waters of the State (WOTS), and the special-status plant, fish, and wildlife resources, including their habitat. The applicable California FGCs are as follows:

- **Sections 1600-1616 (Streambed Alteration):** The CDFW is responsible for the protection and conservation of fish and wildlife resources in California. Under Section 1602, CDFW has the authority to issue Lake or Streambed Alteration Agreements (LSAA) for construction activities that substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFW as providing resources for fish or wildlife.

- **Sections 1900-1913 (Native Plant Protection Act):** The Native Plant Protection Act (NPPA) of 1977 prohibits the taking, possessing, or sale within the State of any plants that the CDFW has determined are rare, threatened,



or endangered. The CDFW has the authority to enforce the provisions of this act and authorize measures to salvage native plants that may otherwise be affected by project activities, if deemed appropriate.

- **Sections 3500-3516 (Game Birds and Birds of Prey):** The CDFW protects game birds, birds of prey, migratory birds, and fully protected birds and their nests, eggs, and young from take or possession, except as otherwise provided by the code (e.g., incidental take under CESA).
- **Sections 3511, 4700, 5050, and 5515 (Fully Protected Species):** California statutes accord a "fully protected" status to specific birds, mammals, reptiles, amphibians, and fish. These species cannot be "taken," an no process exists for issuance of incidental take permits for fully protected species.

4.3 LOCAL REGULATIONS

The proposed Project site is designated as a Business Park by the City's General Plan. According to the General Plan, the Business Park land use designation applies to sites in a landscaped setting for office centers, research-and-development facilities, and, under appropriate conditions, medical and institutional uses. Secondary uses may include limited industrial activities, small-scale warehousing and distribution operations, and limited retail sales accessory to these areas. Commercial uses and services for employees and businesses (e.g., delicatessens, childcare, dry cleaners, and branch banks) are required as a means of reducing trips and vehicle miles traveled. These uses must be centrally located and have adequate pedestrian access. The commercial uses and services must also be ancillary, rather than primary uses, and there must be adequate public infrastructure to support the proposed use. Policy plans and specific plans may additionally allow for commercial development.

This designation is intended for parcels that would be developed as a unit. In addition, this designation is intended for lower intensity uses than the uses permitted in the Industrial Park and Technology Park designations, thereby reducing potential adverse impacts to adjacent development.

5.0 ENVIRONMENTAL SETTING

5.1 SITE CONDITIONS AND LAND USE

5.1.1 Local Setting and Existing Land Use

The proposed Project would be located on APN 0133-120-380 within the Vaca Valley Business Park Policy Plan area. This parcel is approximately 3.41 acres and currently undeveloped. The proposed Project site's topography is generally flat with a maximum elevation of 90 feet above mean sea level. The site's existing drainage flows in a south/south easterly direction toward Horse Creek, which is located approximately 135 feet south of the study area. The proposed Project site is surrounded by the following land uses:

- **North.** Undeveloped land is located north of the proposed Project site, beyond which lies New Horizons Way followed by undeveloped land within the Vaca Valley Business Park that is designated Business Park by the City's General Plan.
- **South.** Undeveloped land, identified as APN 0133-120-540, and Horse Creek are located south of the proposed Project site. Beyond Horse Creek lies Horse Creek Drive followed by undeveloped land, which is within the Vaca Valley Business Park and designated Business Park by the City's General Plan. I-80 is approximately 0.25 mile south of the proposed Project site.
- **West.** Genentech's Vacaville Campus, which also includes an 8.9-megawatt solar facility, is located west of the proposed Project site, across Grassland Drive. I-505 is located approximately 0.5 mile west of the proposed Project site.
- **East.** Kaiser Permanente Medical Center is located east of the proposed Project site, across East Akerly Drive.

5.1.2 Physical Conditions

The topography of the study area is nearly level with elevations range from approximately 75 to 90 feet above mean sea level. Regionally, the study area has a Mediterranean climate characterized by hot, dry summers and moderate winters, with average annual temperatures ranging from 57.5 to 94 degrees Fahrenheit (°F). Historical data used to describe the climate was collected at the Vacaville Nut Tree Airport Station, approximately 1.25 miles southwest of the study area (Western Regional Climate Center 2019). Precipitation in the study area occurs as rain. Average annual rainfall is 22 inches and occurs primarily from October through April. The growing season (i.e., 50 percent probability of air temperature 32ºF or higher) in the study area is around 293 days and occurs between mid-February and early December (Western Regional Climate Center 2019).

5.2 BIOTIC HABITATS

5.2.1 Habitat Communities

Habitat types in the study area were classified based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988), as well as the *California Natural Community List* (CDFW 2019f), which is adapted from the technical approach and vegetation alliance classification system described in *A Manual of California Vegetation* (Sawyer et al. 2009). The habitat community present in the study area includes barren and ruderal. No



aquatic resources were observed in the study area. Descriptions of the habitat is provided below, representative photographs are provided in Appendix B, and a complete list of plant and wildlife species observed is provided in Appendix C.

Upland Habitat Types

Barren and Ruderal

The study area is highly disturbed from frequent discing and tilling which has created barren and ruderal habitats providing little to no vegetation communities. Based on historical areal imagery, the study area does not support grassland communities or other habitats when not recently disturbed. Due to frequent human disturbance, the vegetation consists of sparse cover of opportunistic non-native ruderal grass and forb species, such as Italian rye grass (*Festuca perennis*), spikeweed (*Centromadia fitchii*), mustard species (*Brassica* spp.), Russian thistle (*Salsola tragus*), European heliotrope (*Heliotropium europaeum*) and stinkwort (*Dittrichia graveolens*). The study area is bound by roadway on three sides and an adjacent barren and ruderal undeveloped property to the west that is also frequently disturbed by discing and tilling.

Aquatic Habitats

No perennial streams were observed within the study area that would be covered under the jurisdiction of CDFW, Corps or RWQCB; however, Horse Creek (perennial stream) is located approximately 135 feet south of the study area. Horse Creek has been altered to function as a flood control channel and receives water primarily through runoff from surrounding developments, roadside and is also fed by other tributaries located beyond the study area. Common vegetation observed within Horse Creek consists primarily of cattail species (*Typha* sp.), tall cyperus (*Cyperus eragrostis*), perennial pepperweed (*Lepidium latifolium*), and California sycamore (*Platanus racemosa*) which were observed along the bed and banks of the feature.

5.2.2 Habitat Connectivity

Habitat corridors are segments of land that provide linkages between different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. Habitat corridors often consist of riparian areas along streams, rivers, or other natural features. The study area does not act as a corridor for species dispersal or provide migration habitat connectivity to adjacent habitat; however, the adjacent Horse Creek could act as a migration and dispersal habitat for amphibians, reptiles and fish.

5.2.3 Invasive Species

Invasive plants (i.e., noxious weeds) are undesirable, non-native plants that commonly invade disturbed sites. Most species were introduced from Europe and Asia and are known to degrade native wildlife habitat and plant communities. When disturbance results in the creation of habitat openings or in the loss of intact native vegetation, invasive plants may colonize the site and spread, often out-competing native species. Once established, they are very difficult to eradicate and could pose a threat to native species.

All non-native plant species were reviewed to determine their status as invasive plants according to the ratings in the California Invasive Plant Inventory produced by California Invasive Plant Council (Cal-IPC) (Cal-IPC 2006, 2019).



Cal-IPC categorizes non-native invasive plants into three categories of overall negative ecological impact in California as “high”, “moderate”, and “limited”. Invasive species with a Cal-IPC rating of “high” that were observed in the study area include yellow star thistle (*Centaurea solstitialis*).

5.2.4 Sensitive Natural Communities and Aquatic Habitats

Habitats are considered “sensitive” by CDFW if they are identified on the List of Vegetation Alliances and Associations as being highly imperiled or classified by CDFW in the CNDDB as natural communities of special concern – Ranks S1 to S3. No sensitive natural communities of special concern were documented in the study area during the reconnaissance-level biological field survey. No other natural communities of concern identified by the USACE, RWQCB, and CDFW, including wetlands and other aquatic habitats, were observed in the study area.

5.2.5 Special-Status Plant Species

Regionally occurring special-status plant species were identified based on a review of pertinent literature, the USFWS species list, CNDDB, and CNPS database records, and the reconnaissance-level biological field survey results. CNNDB special-status plant species occurrences within five miles of the study area are illustrated in Figure 3. For each species, habitat requirements were assessed and compared to the habitats in the study area and immediate vicinity to determine if potential habitat occurs in the study area. For the purposes of this review, all regionally occurring plant species listed under the FESA, CESA and CNPS are included in Table 1, regardless of whether the study area provides potential habitat.



Table 1. Special-Status Plant Species with Potential to Occur in the Study Area

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Ferris' milk-vetch *Astragalus tener* var. *ferrisiae*	-/-/1B.1	Butte, Sutter, Colusa, Yolo, Glenn and Solano.	Wetlands, meadows, valley grassland and wetland-riparian. Elev. 1-263	Apr-May	**Absent.** Study area does not contain wetlands or valley grassland and this species was not observed during the reconnaissance survey.
Alkali milk-vetch *Astragalus tener* var. *tener*	-/-/1B.2	Alameda, Monterey, San Diego, Sonoma, Contra Costa, Napa, San Francisco, Stanislaus, Kern, San Benito, San Joaquin, Yolo, Merced, Santa Clara and Solano.	Valley and foothill grassland in adobe clay soil; playas and vernal pools with alkaline soil. Elev. 0-200	Mar-Jun	**Absent.** Study area does not contain vernal pools or valley grassland and this species was not observed during the reconnaissance survey.
Heartscale *Atriplex cordulata* var. *cordulata*	-/-/1B.2	Alameda, Contra Costa, Fresno, Kern, Madera, Merced, San Joaquin, Solano, Stanislaus and Tulare.	Chenopod scrub, meadows and seeps, valley and foothill grassland in saline or alkaline sandy soil. Elev. 0-1840	Apr-Oct	**Absent.** Study area does not contain scrub meadows or alkaline sandy soil and this species was not observed during the reconnaissance survey.
Brittlescale *Atriplex depressa*	-/-/1B.2	Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Merced, Solano, Tulare and Yolo.	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools with alkaline, clay soil. Elev. 0-1050	Apr-Oct	**Absent.** Study area does not contain scrub, meadows or vernal pool habitat and this species was not observed during the reconnaissance survey.
Vernal pool smallscale *Atriplex persistens*	-/-/1B.2	Colusa, Glenn, Madera, Merced, Solano, Stanislaus and Tulare.	Vernal pools with alkaline soil. Elev. 30-380	Jun-Oct	**Absent.** Study area does not contain vernal pools and this species was not observed during the reconnaissance survey.



Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Pappose tarplant *Centromadia parryi* ssp. *parryi*	-/-/1B.2	Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma and Yolo.	Chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grassland often in alkaline soil. Elev. 0-1380	May-Nov	**Absent.** Study area does not contain marshes or grassland habitat and this species was not observed during the reconnaissance survey.
Hispids birds-beak *Chloropyron molle* ssp. *hispidum*	-/-/1B.1	Alameda, Kern, Merced, Marin, Placer and Solano.	Meadows and seeps, playas, valley and foothill grassland in alkaline soil. Elev. 0-510	Jun-Sep	**Absent.** Study area does not contain meadows or grassland habitat and this species was not observed during the reconnaissance survey.
Saltmarsh water-hemlock *Cicuta maculata* var. *bolanderi*	-/-/2B.1	Contra Costa, Los Angeles, Monterey, Marin, Napa, Orange, Sacramento, Santa Barbara, San Bernardino, San Luis Obispo and Solano.	Coastal fresh or brackish water marshes and swamps. Elev. 0-660	Jul-Sep	**Absent.** Study area does not contain fresh or brackish marshes and this species was not observed during the reconnaissance survey.
Recurved larkspur *Delphinium recurvatum*	-/-/1B.2	Northern counties of Butte, Glen, Colusa and Sutter. Central counties of Solano, Contra Costa, Alameda and San Joaquin. Several southern California.	Chenopod scrub, cismontane woodland, valley and foothill grassland in alkaline soil. Elev. 10-2595	Mar-Jun	**Absent**. Study area does not contain suitable scrub, woodland or valley/foothill grassland habitat and this species was not observed during the reconnaissance survey.

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Dwarf downingia *Downingia pusilla*	-/-/2B.2	Calaveras, Placer, Sonoma, Fresno, Sacramento, Stanislaus, Merced, San Joaquin, Tehama, Napa, Solano and Yuba.	Mesic valley and foothill grassland, vernal pools. Elev. 0-1460	Mar-May	**Absent**. Study area does not contain valley/foothill grassland or vernal pool habitat and this species was not observed during the reconnaissance survey.
San Joaquin spearscale *Extriplex joaquinana*	-/-/1B.2	Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano and Yolo.	Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland in alkaline soil. Elev. 0-2740	Apr-Oct	**Absent.** Study area does not contain scrub, meadows or grassland habitat and this species was not observed during the reconnaissance survey.
Fragrant fritillary *Fritillaria liliacea*	-/-/1B.2	Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano and Sonoma.	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland often in serpentinite soil. Elev. 10-1345	Feb-Apr	**Absent.** Study area does not contain woodlands, scrub or grassland habitat and this species was not observed during the reconnaissance survey.
Adobe-lily *Fritillaria pluriflora*	-/-/1B.2	Butte, Napa, Yolo, Colusa, Sacramento, Glenn, Solano, Lake and Tehama.	Chaparral, cismontane woodland, valley and foothill grassland. Usually on clay soils; sometimes serpentine. Elev. 14-288	Feb-Apr	**Absent**. Study area does not contain chaparral, woodland or valley/foothill grassland habitat and this species was not observed during the reconnaissance survey.

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Boggs Lake hedge-hyssop *Gratiola heterosepala*	-/SE/1B.2	Fresno, Lake, Lassen, Madera, Mendocino, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, Sonoma and Tehama.	Wetlands, lake-margins, vernal pools, freshwater wetlands and wetland riparian. Elev. 1-8,000	Apr-Aug	**Absent.** Study area does not contain wetlands, vernal pools or riparian habitat and this species was not observed during the reconnaissance survey.
Brewer's western flax *Hesperolinon breweri*	-/-/1B.2	Alameda, Contra Costa, Napa and Solano.	Chaparral, valley grassland, foothill woodlands Elev. 640-3,000	May-Jul	**Absent.** Study area does not contain grassland or woodland habitat and this species was not observed during the reconnaissance survey.
Wooly rose-mallow Hibiscus *lasiocarpos* var. *occidentalis*	-/-/1B.2	Butte, Contra Costa, Colusa, Glenn, Lake, Riverside, Sacramento, San Joaquin, Solano, Sutter and Tehama.	Freshwater marshes and swamps, often in riprap on sides of levees. Elev. 0-395.	Jun-Sep	**Absent.** Study area does not contain marshes or swamps and this species was not observed during the reconnaissance survey.
Carquinez goldenbush *Isocoma arguta*	-/-/1B.1	Contra Costa and Solano.	Valley and foothill grassland in alkaline soil. Elev. 0-70	Aug-Dec	**Absent.** Study area does not contain grassland habitat and this species was not observed during the reconnaissance survey.
Contra Costa goldfields *Lasthenia conjugens*	FE/-/1B.1	Alameda, Contra Costa, Mendocino, Monterey, Napa, Santa Barbara, Santa Clara, Solano and Sonoma.	Cismontane woodland, playas in alkaline soil, mesic valley and foothill grassland, vernal pools in mesic areas. Elev. 0-1545	Mar-Jun	**Absent.** Study area does not contain woodland, grassland or vernal pool habitat and this species was not observed during the reconnaissance survey.

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	-/-/1B.1	Butte, Colusa, Kern, Los Angeles, Merced, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Francisco, San Luis Obispo, Tehama, Tulare, Ventura and Yolo.	Coastal salt marshes and swamps, playas, vernal pools. Elev. 0-4005	Feb-Jun	**Absent.** Study area does not contain marshes or vernal pool habitat and this species was not observed during the reconnaissance survey.
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	-/-/1B.2	Alameda, Contra Costa, Fresno, Marin, Napa, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo and Solano.	Freshwater and brackish marshes and swamps. Elev. 0-20	May-Sep	**Absent.** Study area does not contain marshes or swamps and this species was not observed during the reconnaissance survey.
Legenere *Legenere limosa*	–/–/1B.1	Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama and Yuba.	Deep, seasonally wet habitats such as vernal pools, ditches, marsh edges, and riverbanks. Elev. below 2,400	Apr-Jun	**Absent.** Study area does not contain wet habitats and this species was not observed during the reconnaissance survey.
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	-/-/1B.2	Glenn, Merced, Solano and Yolo.	Wetlands, valley grassland and wetland riparian. Elev. 3-100	Mar-May	**Absent.** Study area does not contain wetland or grassland habitat and this species was not observed during the reconnaissance survey.
Mason's lilaeopsis *Lilaeopsis masonii*	-/R/1B.1	Contra Costa, Marin, Napa, Sacramento, San Joaquin and Solano.	Wetlands, riparian, freshwater marsh, brackish marsh, wetland riparian. Elev. 0-32	Apr-Nov	**Absent.** Study area does not contain wetland or riparian habitat and this species was not observed during the reconnaissance survey.

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Delta mudwort *Limosella australis*	-/-/2B.1	Contra Costa, Marin, Plumas, Sacramento, San Joaquin and Solano.	Riparian scrub, freshwater or brackish marshes and swamps, usually on mud banks. Elev. 0-10	May-Aug	**Absent.** Study area does not contain riparian or marsh habitat and this species was not observed during the reconnaissance survey.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	-/-/1B.1	Colusa, Lassen, Solano, Trinity, Glenn, Mendocino, Sonoma, Yolo, Humboldt, Marin, Sutter, Lake, Napa and Tehama.	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, mesic vernal pools. Elev. 15-5710	Apr-Jul	**Absent**. Study area does not contain woodland, coniferous forest, valley/foothill grassland, seeps or vernal pool habitat and this species was not observed during the reconnaissance survey.
Colusa grass *Neostapfia colusana*	T/E/1B.1	Colusa, Merced, Solano, Stanislaus and Yolo.	Large vernal pools on Adobe soils. Elev. 155-340	May-Aug	**Absent.** Study area does not contain vernal pool habitat and this species was not observed during the reconnaissance survey.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	T/E/1B.1	Fresno, Madera, Merced, Solano, Stanislaus and Tulare.	Vernal pools. Elev. 155-200.	Apr-Sep	**Absent.** Study area does not contain vernal pool habitat and this species was not observed during the reconnaissance survey.
Bearded popcornflower *Plagiobothrys hystriculus*	-/-/1B.1	Merced, Napa, Solano and Yolo.	Valley and foothill grassland, vernal pools and wetlands. Elev. 1-84	Apr-May	**Absent**. Study area does not contain valley/foothill grassland, vernal pool or wetland habitat and this species was not observed during the reconnaissance survey.

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
California alkali grass *Puccinellia simplex*	-/-/1B.2	Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Napa, San Bernardino, Solano, Stanislaus, Tulare and Yolo.	Chenopod scrub; meadows and seeps; valley and foothill grassland; vernally mesic vernal pools; sinks, flats and lake margins. Elev. 5-3050	Mar-May	**Absent.** Study area does not contain scrub, meadows, grassland or vernal pool habitat and this species was not observed during the reconnaissance survey.
Slender-leaved pondweed *Stuckenia filiformis* ssp. *alpina*	-/-/2B.2	Alameda, Butte, Contra Costa, El Dorado, Fresno, Humboldt, Lassen, Merced, Mono, Mariposa, Placer and Shasta.	Assorted shallow freshwater marshes and swamps. Elev. 980-7055	May-Jul	**Absent.** Study area does not contain marsh habitat and this species was not observed during the reconnaissance survey.
Suisun Marsh aster *Symphyotrichum lentum*	-/-/1B.2	Alameda, Amador, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Humboldt, Kern, Lake, Mendocino, Mariposa, Marin, Napa, Nevada, Placer, Sacramento, Santa Barbara, Santa Clara, San Joaquin, Solano, Sonoma, Sutter, Tulare, Tuolumne and Yolo.	Brackish and freshwater marshes and swamps. Elev. 0-10	Apr-Nov	**Absent.** Study area does not contain marsh habitat and this species was not observed during the reconnaissance survey.
Two-fork clover *Trifolium amoenum*	FE/-/1B.1	Alameda, Marin, Napa, Santa Clara, San Mateo, Solano and Sonoma.	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elev. 15-1365	Apr-Jun	**Absent.** Study area does not contain scrub or grassland habitat and this species was not observed during the reconnaissance survey.

Common Name Scientific Name	Listing Status[1] (Fed/State/CRPR)	Known County Range	Known Habitat and Elevation Range (Feet)	Blooming Period	Potential for Occurrence
Saline clover *Trifolium hydrophilum*	-/-/1B.2	Alameda, Butte, Calaveras, Contra Costa, Colusa, El Dorado, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Mendocino, Merced, Monterey, Mariposa, Marin, Napa, Orange, Riverside, Sacramento, Santa Barbara, San Bernardino, San Benito, Santa Clara, Santa Cruz, San Diego, San Francisco, Shasta, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Stanislaus, Tehama, Tulare, Tuolumne, Ventura and Yolo.	Marshes and swamps, valley and foothill grassland in mesic areas with alkaline soil, vernal pools. Elev. 0-985	Apr-Jun	**Absent.** Study area does not contain marsh, vernal pool or grassland habitat and this species was not observed during the reconnaissance survey.
Crampton's tuctoria or Solano grass *Tuctoria mucronata*		Solano and Yolo.	Wetlands, vernal pools, valley grassland, wetland riparian. Elev. 16- 50	Apr-Aug	**Absent.** Study area does not contain wetland, vernal pool or grassland habitat and this species was not observed during the reconnaissance survey.
Oval-leaved viburnum *Viburnum ellipticum*	-/-/2B.3	Alameda, Contra Costa, Colusa, El Dorado, Fresno, Glenn, Humboldt, Lake, Los Angeles, Mendocino, Mariposa, Napa, Nevada, Placer, Shasta, Sonoma and Tehama.	Chaparral, cismontane woodland, and lower montane coniferous forest. Elev. 705-4595	May-Jun	**Absent.** Study area does not contain woodland or coniferous forest habitat and this species was not observed during the reconnaissance survey.

[1]**Federal and State Status Codes:** E = Endangered; T= Threatened; R = Rare
CNPS CRPR Codes:
List 1B - Plants rare, threatened, or endangered in California and elsewhere.
List 2B - Plants Rare, Threatened, or Endangered in California, But more common elsewhere.
Extensions: x.1 - Seriously threatened in California; x.2 – Moderately threatened in California; x.3 -Not very threatened in California.

5.2.6 Special-Status Animal Species

Regionally occurring special-status animal species were identified based on a review of pertinent literature, the USFWS species list, CNDDB database records, a query of the California WHRS (CDFW 2014), and the

reconnaissance-level biological field survey results. CNNDB special-status animal species occurrences within five miles of the study area are illustrated in Figure 4. For each species, habitat requirements were assessed and compared to the habitats in the study area and immediate vicinity to determine the species' potential to occur in or near the study area. For the purposes of this review, all regionally occurring wildlife species listed under the FESA or CESA are included in Table 2, regardless of whether the study area provides potential habitat.

Table 2. Special-Status Animal Species within Potential to Occur in the Study Area

Common Name Scientific Name	Listing Status[1] (Fed/State)	Known Habitat Requirements	Potential for Occurrence
Invertebrates			
Conservancy fairy shrimp *Branchinecta conservatio*	T/–	Vernal pools, swales, and ponded ephemeral freshwater habitats, often larger, turbid playa pools.	**Absent.** No vernal pool habitat occurs within the study area.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–	Vernal pools, swales, ephemeral freshwater habitats, often grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	**Absent** No vernal pool habitat occurs within the study area.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–	Vernal pools, swales, and ponded ephemeral freshwater habitats.	**Absent.** No vernal pool habitat occurs within the study area.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–	Elderberry shrubs having stems with a basal diameter equal to or greater than 1 inch. Typically associated with riparian habitat.	**Absent**. No elderberry shrubs or riparian habitat are present in the study area.
Delta green ground beetle *Elaphrus viridis*	T/-	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis Air Force Base.	**Absent.** Outside the range of the species.
Amphibians			
California tiger salamander *Ambystoma californiense*	T/T	Requires seasonally inundated wetland/vernal pools and other ponded habitats for breeding with associated upland terrestrial habitat. Utilizes small mammal burrows within upland habitat.	**Absent.** No wetland, vernal pools or burrows in the study area. The study area does not provide suitable dispersal habitat as there are no adjacent aquatic breeding site or suitable refugia habitat. Surrounding area consists of commercially developed properties and frequently disturbed undeveloped land.
Foothill yellow legged frog *Rana boylii*	-/CT	Inhabits partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs cobble-sized substrate for egg-laying and at least 15 weeks of water to attain metamorphosis.	**Absent.** No riverine or stream habitat is present in the study area.

Common Name Scientific Name	Listing Status[1] (Fed/State)	Known Habitat Requirements	Potential for Occurrence
California red-legged frog *Rana draytonii*	T/SSC	Requires perennial or near-perennial aquatic habitats, especially for breeding; often slow-moving streams, freshwater pools and ponds over 1-foot deep, often with overhanging vegetation; adjacent upland habitats are often used for temporary refuges or dispersal movements	**Absent.** No suitable aquatic or upland habitat is present in the study area.
Reptiles			
Western pond turtle *Emys marmorata*	–/SSC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Require an upland oviposition site near the aquatic site.	**Absent.** No suitable aquatic or upland habitat is present in the study area.
Giant garter snake *Thamnophis gigas*	T/T	Freshwater marshes and low gradient streams with emergent vegetation; adapted to drainage canals and irrigation ditches with mud substrate.	**Absent.** No suitable aquatic or upland habitat is present in the study area.
Birds			
Tricolored blackbird *Agelaius tricolor*	–/CE, SSC	Breeds near fresh water in dense emergent vegetation. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Absent.** No suitable nesting or foraging habitat is present in the study area.
Grasshopper sparrow *Ammodramus savannarum*	–/SSC	Native grasslands with a mix of grasses, forbs and scattered shrubs. Lowland plains, in valleys and on hillsides on lower mountain slopes.	**Absent**. No suitable nesting or foraging habitat is present in the study area.
Western burrowing owl *Athene cunicularia*	–/SSC	Grasslands and ruderal habitats. Uses mammal burrows or other suitable underground cavities.	**Absent.** No suitable nesting or foraging habitat is present in the study area. No burrows observed during reconnaissance survey.
Swainson's hawk *Buteo swainsoni*	–/T	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain.	**Absent.** No suitable nesting habitat is present in the study area and marginal foraging habitat is present in the study area.
White-tailed kite *Elanus leucurus*	–/FP	Nests in tall shrubs and trees, forages in grasslands, agricultural fields and marshes.	**Absent**. No suitable nesting or foraging habitat present in the study area for the species.

Common Name Scientific Name	Listing Status[1] (Fed/State)	Known Habitat Requirements	Potential for Occurrence
California black rail *Laterallus jamaicensis coturniculus*	-/T	Freshwater marshes, wet meadows and shallow margins of saltwater marshes boarding larger bays. Requires dense vegetation for nesting habitat.	**Absent.** No nesting or foraging habitat is present in the study area.
Yellow-breasted chat *Icteria virens*	–/SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	**Absent**. No suitable nesting or foraging habitat is present in the study area.
Mammals			
Townsend's big-eared bat *Corynorhinus townsendii*	-/SSC	Roosts in man-made structures such as old buildings and bridge crevices	**Absent**. No suitable roosting habitat is present in the study area.
Suisun shrew *Sorex ornatus sinuosus*	-/SSC	Found in tidal marshes of the northern shores of San Pablo and Suisun bays. Requires dense low-lying cover and driftweed and other litter above the mean high tide line for nesting and foraging.	**Absent**. No tidal marsh habitat is present in the study area.
American badger *Taxidea taxus*	-SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Absent**. No suitable habitat is present in the study area. No burrows were observed during the reconnaissance survey.

[1]**Federal and State Status Codes:** E = Endangered; T = Threatened; CT= Candidate Threatened; CE= Candidate Endangered; FP = Fully Protected; SSC= Species of Special Concern.

6.0 RESULTS: BIOLOGICAL RESOURCES AND DISCUSSION OF IMPACTS

6.1 HABITATS AND NATURAL COMMUNITIES OF CONCERN

The study area does not contain any sensitive natural communities as classified by the CDFW. In addition, no aquatic habitats were identified within the study area that could be considered WOTUS and subject to the USACE and RWQCB jurisdiction under Sections 404 and 401 of the CWA, or subject to CDFW jurisdiction under Section 1600 of the California FGC.

6.1.1 Critical Habitat

USFWS designated critical habitat is not present in the study area or in the immediate vicinity.

6.2 SPECIAL-STATUS PLANT SPECIES

There is no potential habitat in the study area for special-status plant species with occurrences within a five-mile radius. Although the reconnaissance-level biological survey conducted on August 23, 2019 (i.e., late bloom period for the region) is outside the blooming period for most of the plants listed in Table 1, the site is frequently and heavily disturbed from discing or tilling. Historical aerial imagery indicates this has been occurring over the course of several years which limits the opportunity for vegetation to establish. Based on the lack of suitable habitat, the study area does not provide moderate or high potential habitat for special-status plant species to occur and the Project anticipates no effects to special-status plants.

6.3 SPECIAL-STATUS ANIMAL SPECIES

Although there are CNDDB occurrence records within five miles of the study area for special-status animal species (CNDDB 2019a and Figure 4), the study area does not provide suitable habitat (i.e., tall trees, burrows, aquatic features, elderberry shrubs) for potential special-status species to occur. Due to frequent disturbance and lack of vegetation, the study area provides minimal foraging habitat for migratory and special-status birds. The immediate surrounding area also provides minimal habitat for special-status species and migratory birds, as undeveloped areas are heavily and routinely disturbed through discing or tilling. The adjacent Horse Creek and associated aquatic vegetation may provide suitable habitat for aquatic and semi-aquatic special-status species and migratory nesting birds; however, this is outside the Project limits and will not be impacted. Avoidance and minimization measures will be incorporated into the Project to avoid direct and indirect effects to special-status species and their habitat. Based on the lack of suitable habitat in the study area, there is low potential for special-status species to occur and the Project anticipates no effects to special-status animals.



7.0 REFERENCES

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. The Jepson Manual: Vascular Plants of California. 2nd edition. University of California Press. Berkeley, California.

California Department of Fish and Wildlife (CDFW). 2014. California Wildlife Habitat Relationships (CWHR), Version 9.0 (personal computer program). California Department of Fish and Wildlife, California Interagency Wildlife Task Group. < https://www.wildlife.ca.gov/data/cwhr> Accessed July 11, 2019

CDFW. 2019a. Rarefind 5. California Natural Diversity Database (CNDDB). California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. < https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data> Accessed July 11, 2019.

CDFW. 2019b. Special Animals List. CDFW, CNDDB. Periodic Publication. 66 pp. Updated August 2018. <https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals>. Accessed July 10, 2019.

CDFW. 2019c. State and Federally Listed Endangered and Threatened Animals of California. CDFW, Biogeographic Data Branch, CNDDB. Updated August 2019. <https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals>. Accessed August 2019.

CDFW. 2019d. State and Federally Listed Endangered, Threatened and Rare Plants of California. California Department of Fish and Wildlife, Biogeographic Data Branch, CNDDB. Updated August 2018. <https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals>. Accessed August 2019.

CDFW 2019e. Special Vascular Plants, Bryophytes, and Lichens List. CDFW, CNDDB. Periodic Publication. 127 pp. Updated March 2019. <https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals>. Accessed August 2019.

CDFW. 2019f. California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. < https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities> Accessed August 2019.

California Invasive Species Council (Cal-IPC). 2006. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. Cal-IPC: Berkeley, California. <www.cal-ipc.org). Accessed August 2019.

Cal-IPC. 2019. California Invasive Plant Inventory. Cal-IPC Inventory Online. Cal-IPC: Berkeley, CA. <www.cal-ipc.org>. Accessed August 2019.

California Native Plant Society (CNPS). 2019. Inventory Of Rare And Endangered Plants (Online Edition, V8-02). Sacramento, California. <http://www.rareplants.cnps.org>. Accessed August 2019.

Google Earth. 2019. Map showing the Project area. Google Earth, 2019. <earth.google.com/web/>. Accessed August 2019.

Mayer, K.E., and W.F. Laudenslayer, Jr., eds. 1988. A Guide To Wildlife Habitats Of California. Sacramento: California Department of Forestry and Fire Protection (CAL FIRE).

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evans. 2009. A Manual of California Vegetation, 2nd Edition. CNPS, Sacramento, California.

United States Fish and Wildlife Services (USFWS). 2019a. Trust Resources Report. Information for Planning and Consultation (IPaC). <https://ecos.fws.gov/ipac/>. Accessed August 2019.

USFWS. 2019b. USFWS National Wetlands Inventory (NWI). < https://www.fws.gov/wetlands/>. Accessed August 2019.

Western Regional Climate Center (WRCC). 2019. Vacaville Nut Tree Airport (AP) Station, California Analysis for Wetlands (WETS) Table, Period of Record: 1971 to 2019. <https://www.wcc.nrcs.usda.gov/climate/navigate_wets.html> Accessed, August 8, 2019.

Figures

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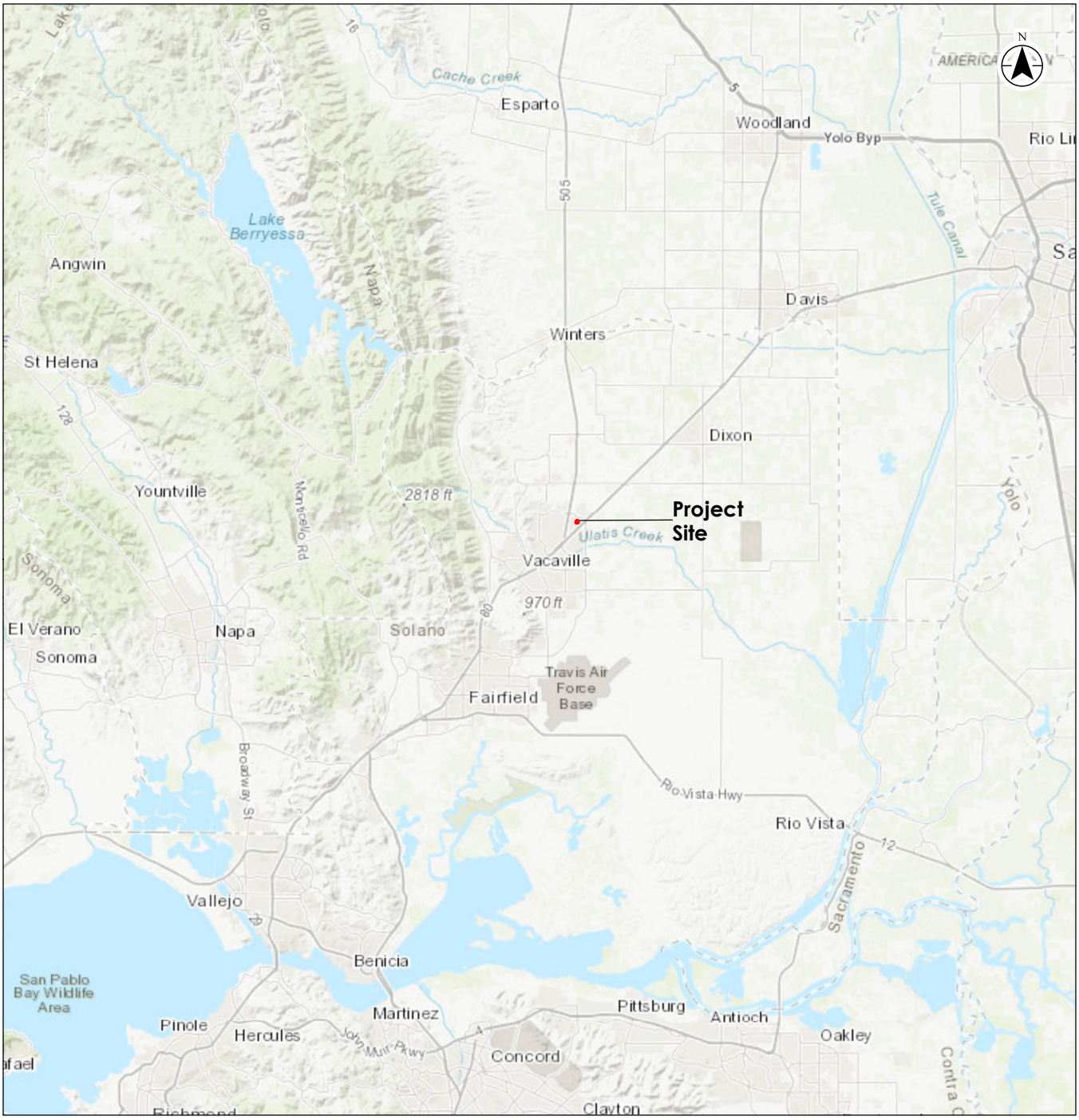



Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Base features produced under license with the Ontario

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0 5 10 Miles

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Stantec

Project Location
Vacaville, California

Prepared by PG on 2019-09-04
Technical Review by KJ on 2019-09-04

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
1

Title
Project Location

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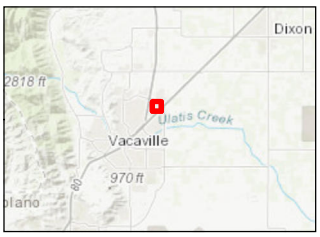

Project Site

Study Area

0 250 500 Feet

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Stantec

Project Location
Vacaville, California

Prepared by PG on 2019-09-05
Technical Review by JE on 2019-09-05

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
2

Title
Study Area

Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
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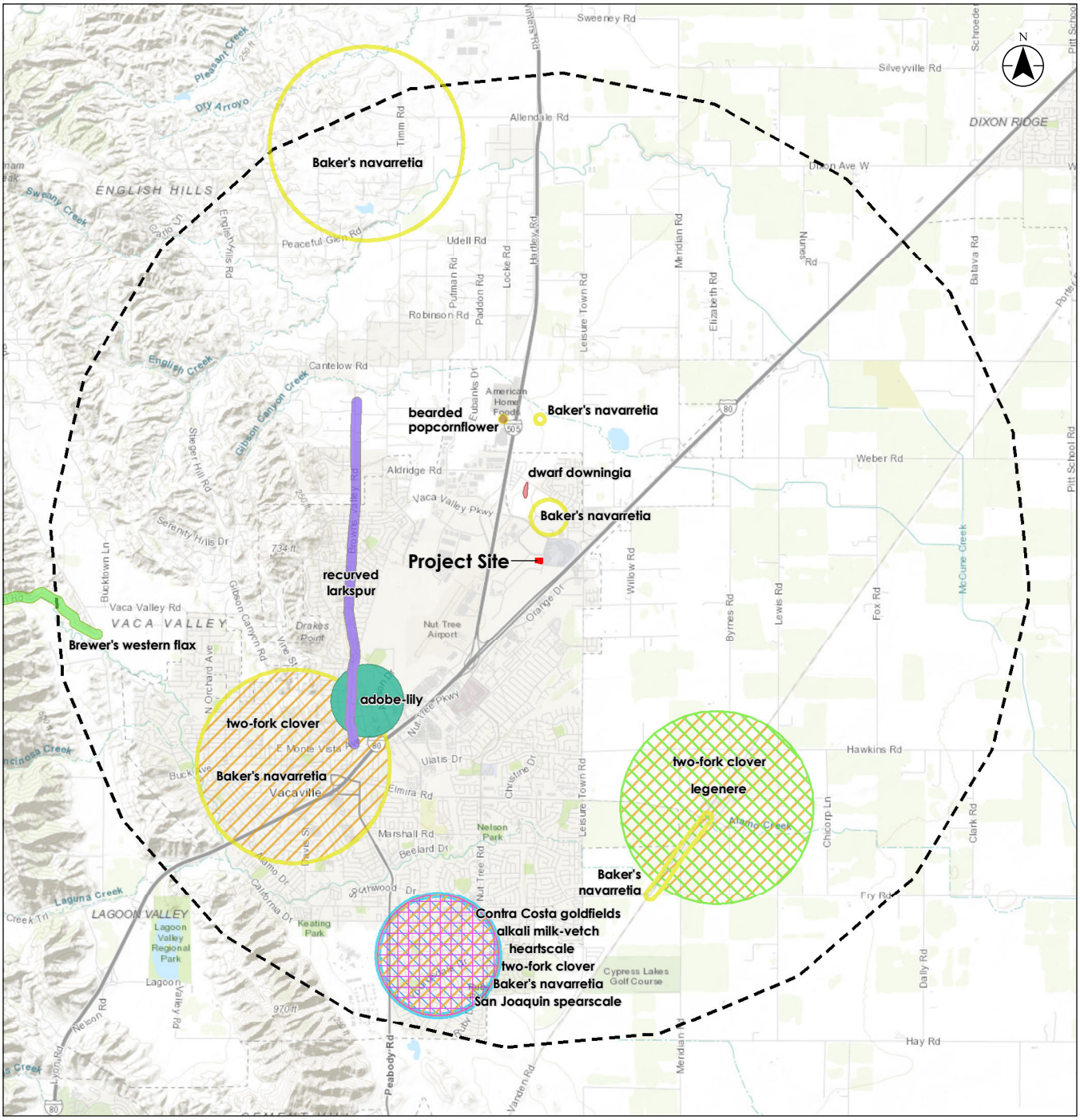



Project Site

5-mile Project Radius

Special-Status Plant Occurrences

- Baker's navarretia
- Brewer's western flax
- Contra Costa goldfields
- San Joaquin spearscale
- adobe-lily
- alkali milk-vetch
- bearded popcornflower
- dwarf downingia
- heartscale
- legenere
- recurved larkspur
- two-fork clover

Source: California Natural Diversity Database, Sept. 2019

0 1 2 Miles

1:100,000 (at original document size of 8.5x11)

Notes

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Stantec

Project Location
Vacaville, California

Prepared by PG on 2019-09-05
Technical Review by JE on 2019-09-05

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
3

Title
CNDDB Special-Status Plant Occurrences within a 5-Mile Radius

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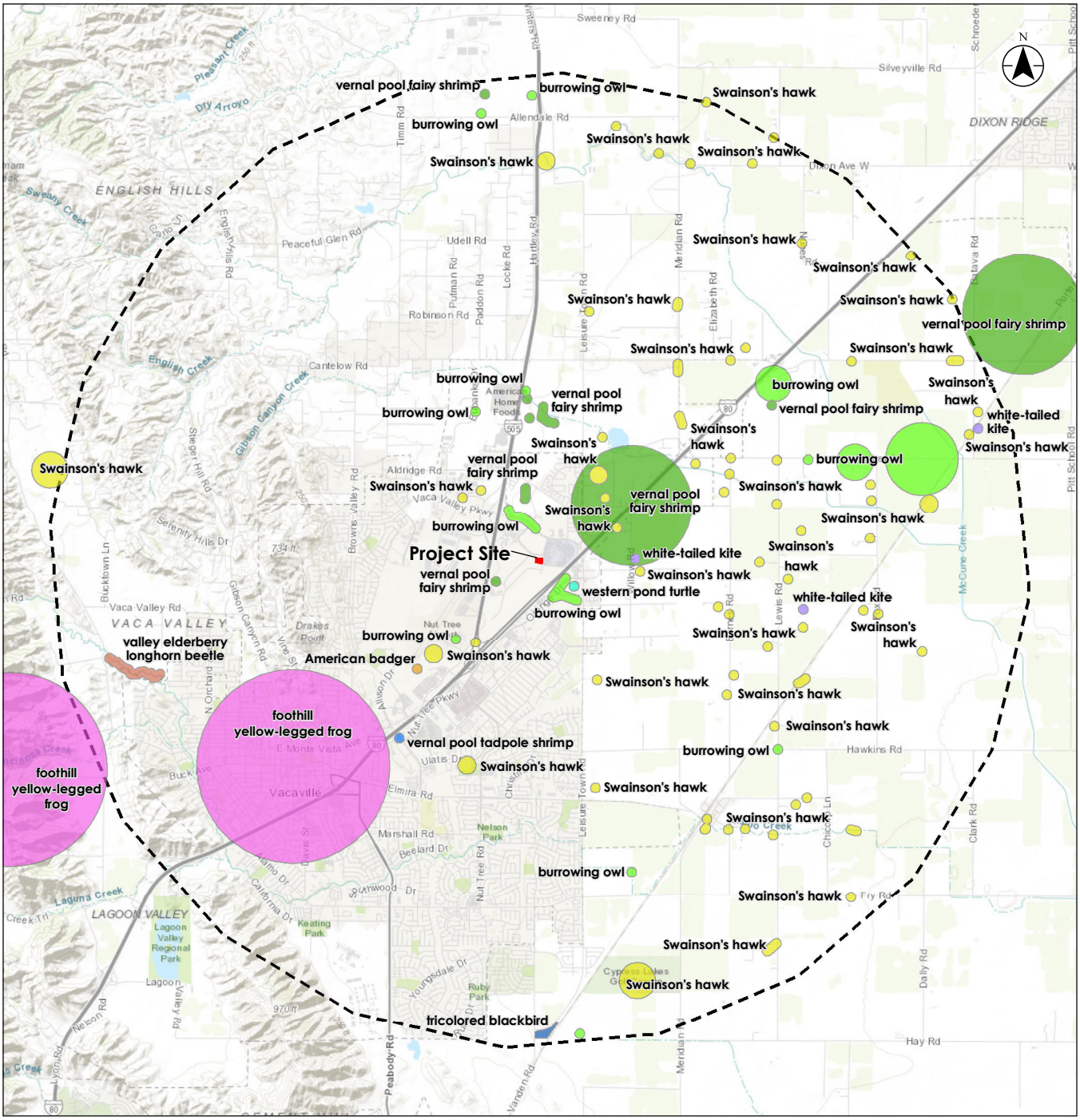



Project Site

5-mile Project Radius

Special-Status Wildlife Occurrences

- American badger
- Swainson's hawk
- burrowing owl
- foothill yellow-legged frog
- tricolored blackbird
- valley elderberry longhorn beetle
- vernal pool fairy shrimp
- vernal pool tadpole shrimp
- western pond turtle
- white-tailed kite

Source: California Natural Diversity Database, Sept. 2019

0 1 2 Miles

1:100,000 (at original document size of 8.5x11)

Stantec

Project Location
Vacaville, California

Prepared by PG on 2019-09-05
Technical Review by JE on 2019-09-05

Client/Project
City of Vacaville
Home 2 Suites Hotel Project

Figure No.
4

Title
CNDDB Special-Status Wildlife Occurrences within a 5-Mile Radius

Notes
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APPENDIX A

USFWS, CNDDB and CNPS Database Results

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Project information

NAME

Vacaville Hotel

LOCATION

Solano County, California



DESCRIPTION

Construct a new hotel

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS

Giant Garter Snake Thamnophis gigas — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4482

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

NOT FOR CONSULTATION

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/2246

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

NOT FOR CONSULTATION

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
Lawrence's Goldfinch Carduelis lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere

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Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

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Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▬)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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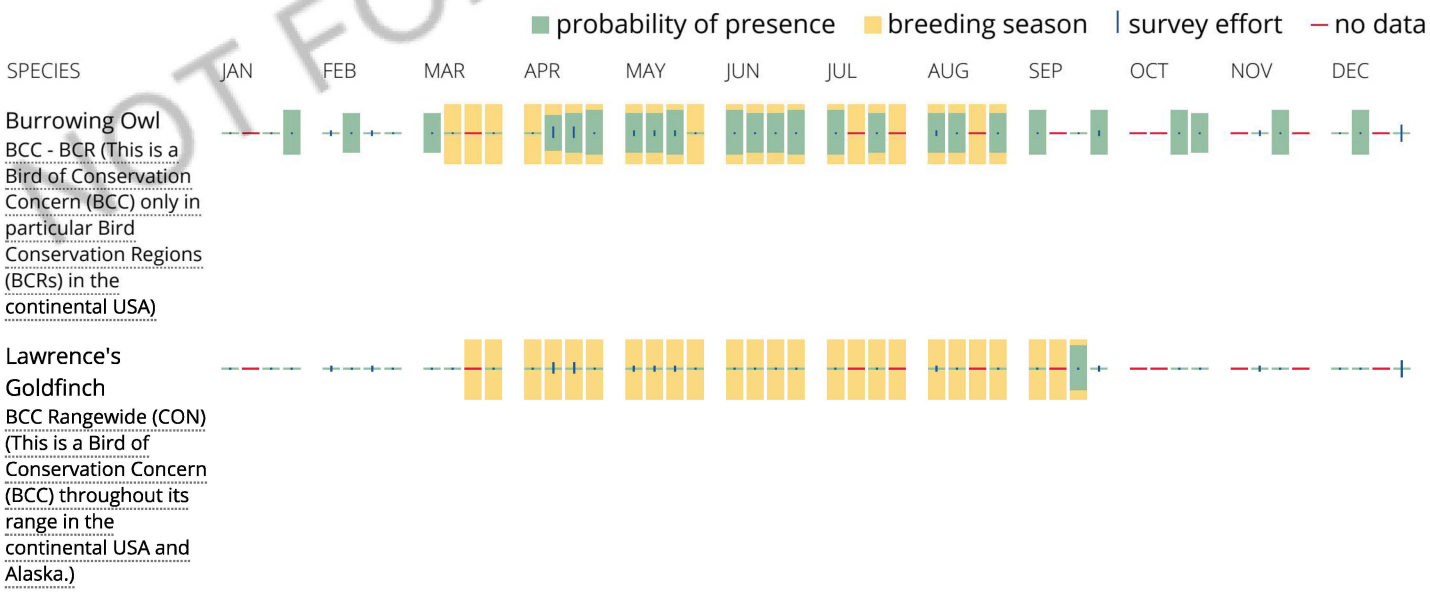
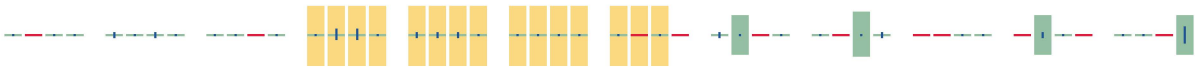


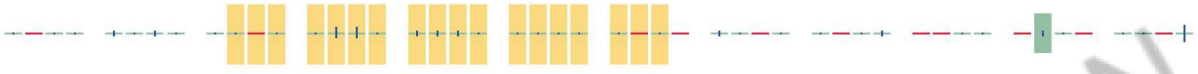
Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



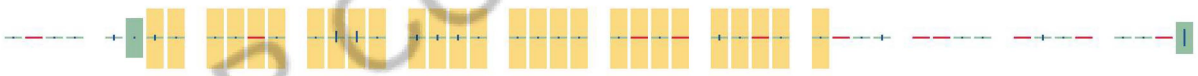
Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



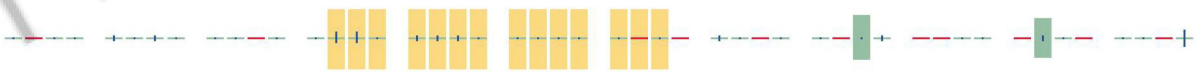
Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



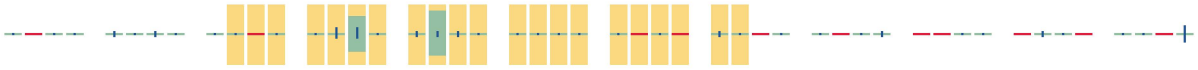
Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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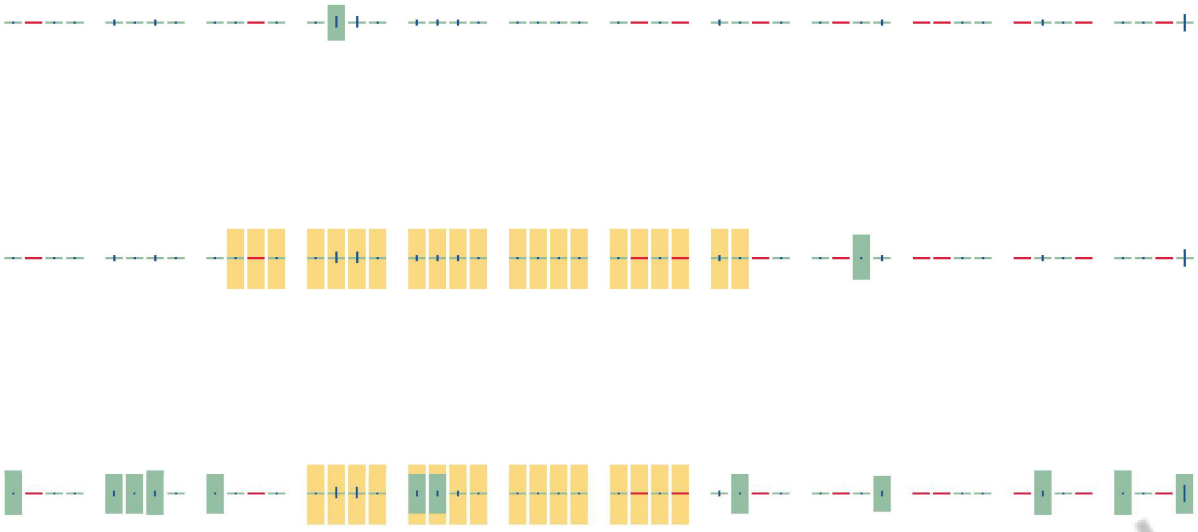
Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal

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bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

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The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Allendale (3812148) OR Dixon (3812147) OR Dozier (3812137) OR Elmira (3812138) OR Fairfield North (3812231) OR Mt. Vaca (3812241))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Astragalus tener var. ferrisiae Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Chloropyron molle ssp. hispidum hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T1	S1	1B.1
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Egretta thula snowy egret	ABNGA06030	None	None	G5	S4	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Elaphrus viridis Delta green ground beetle	IICOL36010	Threatened	None	G1	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Fritillaria pluriflora adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Isocoma arguta Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidium latipes var. heckardii Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Neostapfia colusana Colusa grass	PMPOA4C010	Threatened	Endangered	G1	S1	1B.1
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Orcuttia inaequalis San Joaquin Valley Orcutt grass	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Saldula usingeri Wilbur Springs shorebug	IIHEM07010	None	None	G1	S1	
Sorex ornatus sinuosus Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Tuctoria mucronata Crampton's tuctoria or Solano grass	PMPOA6N020	Endangered	Endangered	G1	S1	1B.1
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 65

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

42 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812241, 3812148, 3812147, 3812231 3812138 and 3812137;

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

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun,Aug,Sep,Oct	1B.2	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2?	G5T4T5
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2S3	G2G3

Gilia capitata ssp. tomentosa	woolly-headed gilia	Polemoniaceae	annual herb	May-Jul	1B.1	S1	G5T1
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	4.2	S3	G3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	1B.1	S1	G1
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	4.2	S3S4	G5T3T4
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	1B.1	S2	G2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S2S3	G5T5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Tuctoria mucronata	Crampton's tuctoria or Solano grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

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APPENDIX B

Representative Site Photos



Photo 1. View of earthen spoil pile within center of the study area, facing west.



Photo 2. View of northwestern portion of the study area, facing northwest.



Photo 3. View of northwestern portion of the study area, facing southeast.



Photo 4. View of eastern portion of the study area, facing west.



Photo 5. View of eastern portion of the study area, facing northeast.



Photo 6. View of southeastern portion of the study area, facing southwest.



Photo 7. View of adjacent Horse Creek located south of the study area, facing west (upstream).



Photo 8. View showing proximity of the study area to Horse Creek, facing north.

APPENDIX C

Observed Plant and Wildlife Species Tables

Table C1. Plant Species Observed on August 23, 2019

Scientific Name	Common Name	Nativity	Family
Abutilon theophrasti	velvet leaf	Non-native	Malvaceae
Brassica nigra	black mustard	Invasive	Brassicaceae
Centaurea solstitialis	yellow starthistle	Invasive	Asteraceae
Centromadia fitchii	spikeweed	Native	Asteraceae
Croton setiger	turkey-mullein	Native	Euphorbiaceae
Dittrichia graveolens	stinkwort	Invasive	Asteraceae
Epilobium brachycarpum	willow herb	Native	Onagraceae
Erigeron sp.	horseweed species	Non-native	Asteraceae
Festuca perennis	Italian rye grass	Invasive	Poaceae
Heliotropium europaeum	European heliotrope	Non-native	Boraginaceae
Lactuca serriola	prickly lettuce	Invasive	Asteraceae
Salsola tragus	Russian thistle	Invasive	Chenopodiaceae

Table C2. Wildlife Observed on August 23, 2019

Scientific Name	Common Name
Birds	
Cathartes aura	Turkey vulture
Corvus brachyrhynchos	American crow

APPENDIX E

Cultural Resources Inventory Report

Home 2 Suites Hotel Project

Cultural Resources Inventory Report

September 6, 2019

Prepared for:

City of Vacaville
Community Development Department
650 Merchant Street
Vacaville, CA 95688

Prepared by:

Stantec Consulting Services Inc.
1383 North McDowell Boulevard, Suite 250
Petaluma, CA 94954

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Figure 1. Project Location Map

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Appendix A: Native American Consultation Documents

Acronyms and Abbreviations

AB	Assembly Bill
APN	Assessor's Parcel Number
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
NAHC	Native American Heritage Commission
NWIC	Northwest Information Center
PRC	Public Resources Code
Project	Home 2 Suites Hotel Project
RPA	Registered Professional Archaeologist
TCR	Tribal Cultural Resources

Executive Summary

Ark Studio, Inc. proposes to build a four-story, 107-room hotel in the City of Vacaville in Solano County, California. In support of the project, Stantec Consulting Services, Inc. has prepared this Cultural Resources Inventory Report, which includes the results of a record search and literature review, Native American consultation, and a pedestrian survey of the project area. No cultural resources were identified within the project area, and the project area exhibits low to moderate sensitivity for buried cultural resources. While unlikely, there is always a possibility that subsurface archaeological deposits may exist in the project area without exhibiting surface manifestations. Stantec recommends following the Inadvertent Discovery protocols in Section 6 if previously unidentified cultural resources are encountered during project implementation.

1.0 PROJECT LOCATION AND DESCRIPTION

This Cultural Resources Inventory has been prepared for the evaluation of potential impacts to cultural resources that may result from the implementation of the proposed Home 2 Suites Hotel Project (Project). Ark Studio, Inc. proposes to develop an approximately 2.26-acre parcel located northeast of the City of Vacaville in Solano County, California (see Figure 1 – Project Location). The parcel is located near the intersection of New Horizons Way and Akerly Drive, 1.25 miles northeast of the Nut Tree Airport. It is approximately 0.45-mile east of I-505 and 0.3-mile west of I-80 on assessor's parcel number (APN) 0133-120-380 and is within the Vaca Valley Business Park Policy Plan area.

The Project calls for the subdivision of the parcel and the construction of a four-story, 107-room hotel. Onsite amenities would include an indoor swimming pool, fitness room, and dining area. The Project would also include 135 onsite parking spaces, landscaping, and utilities.

1.1 PREPARER'S QUALIFICATIONS

Stantec archaeologist Kelsey Scott conducted the field survey for this inventory. The report was completed by Mr. Leven Kraushaar, MA with Project oversight provided by Ms. Alisa Reynolds, MA, RPA. Mr. Kraushaar and Ms. Reynolds meet the Secretary of the Interior's Standards and Guidelines for Archaeology (36 Code of Federal Regulations [CFR] Part 61).

2.0 REGULATORY CONTEXT

This cultural resources inventory was conducted to satisfy the requirements of the California Environmental Quality Act (CEQA) of 1970 as amended and the CEQA Guidelines, codified in Title 14 of the California Code of Regulations (CCR), which provides agencies guidance for compliance with environmental regulations.

2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Historical and archaeological resources are afforded consideration and protection by CEQA (14 CCR Section 21083.2, 14 CCR Section 15064). CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources.

A historical resource is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (CRHR);" or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code (PRC);" or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]).

Historical resources automatically listed in the CRHR include California cultural resources listed in or formally determined to be eligible for the National Register and California Historical Landmarks list from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR.

2.2 ASSEMBLY BILL 52 AND TRIBAL CULTURAL RESOURCES

Assembly Bill (AB) 52 establishes a formal role for California Native American tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential Tribal Cultural Resources (TCR) in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared.

2.2.1 Definition

The definition of Native American tribe is a "Native American tribe located in California that is on the contact list maintained Native American Heritage Commission" (NAHC). This definition does not distinguish between federally recognized and non-federally recognized tribal groups and is therefore more inclusive than the federal definition of "Indian tribe" (PRC § 21073).

2.2.2 Qualification

To qualify as a tribal cultural resource, it must be: 1) listed on or eligible for listing on the CRHR or a local historic register, or 2) a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074). TCRs include “non-unique archaeological resources” that, instead of being important for “scientific” value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of TCRs within their traditionally and cultural affiliated geographic area (PRC § 21080.3.1(a)).

2.2.3 Consultation

Consultation in the context of AB 52 is the meaningful and timely process of seeking, discussing, and carefully considering the views of others. Meaningful consultation usually consists of face-to-face meetings conducted to recognize the cultural values of all parties involved and make a concerted effort to reach an agreement. Consultation should recognize the tribe’s potential need for confidentiality regarding places that hold traditional tribal significance. Consultation with tribes is considered the best way for lead agencies to determine if a project could result in significant environmental impacts on TCRs (PRC § 21080.3.1(a); Government Code § 65352.4).

A project that may cause a substantial adverse change in the significance of a TCR may be considered to have a significant effect on the environment (PRC § 21084.2).

TCRs are not addressed in a cultural resource survey, as they are resources that are of specific concern to California Native American tribes. Pursuant to revisions to CEQA enacted in 2015, TCRs are to be identified by tribes during consultation with the lead agency and can remain confidential (PRC § 21080.3.1).

PRC Section 5097.9 et seq. (1982) establishes that both public agencies and private entities using, occupying, or operating on state property under public permit, shall not interfere with the free expression or exercise of Native American religion and shall not cause severe or irreparable damage to Native American sacred sites. This section also creates the NAHC, charged with identifying and cataloging places of special religious or social significance to Native Americans, identifying and cataloging known graves and cemeteries on private lands, and performing other duties regarding the preservation and accessibility of sacred sites and burials.

PRC 5097.98 discusses the procedures that need to be followed upon the discovery of Native American human remains. The NAHC, upon notification of the discovery of human remains, is required to contact the County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code and shall immediately notify those persons it believes to be most likely descended from the deceased Native American.

Health and Safety Code 7050.5 establishes that any person, who knowingly mutilates, dis-inters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American human remains.

3.0 ENVIRONMENTAL CONTEXT

3.1 GEOGRAPHIC CONTEXT AND NATURAL ENVIRONMENT

Solano County is located on the flat plains of the Central Valley Ecoregion (Griffith et al. 2016; Moratto 1984). The climate is characterized by cool, wet winters and long, hot, dry summers. Annual precipitation is around 24 inches, which is generally limited to the months from October to April (WRCC 2019). Typical vegetation consists of grasslands and valley oak, though much of the region has been intensively farmed since the 19th century (Griffith et al. 2016). The Project is located on an undeveloped parcel with relatively level topography and a maximum elevation of approximately 90 feet above mean sea level (USGS 2019).

3.2 GEOLOGY AND GEOMORPHOLOGY

The Project is within the Coast Ranges Geologic Province. Soils in the study area consist of Quaternary-age alluvial deposits derived from Franciscan Complex parent materials (Koenig 1965). Soils within or immediately adjacent to the Project area include two local soil map units: Clear Lake clay with zero to two percent slopes and San Ysidro sandy loam with zero to two percent slopes (NRCS 2019). No permanent water sources are located on the parcel. The nearest water source, Horse Creek, is located approximately 200 feet south of the study area (USGS 2019).

4.0 CULTURAL SETTING

4.1 PREHISTORIC OVERVIEW

The study area lies within the prehistoric archaeological area known as the Central Valley Region (Moratto 1984; Rosenthal, White, and Sutton 2007). Through the 1940s, enough archaeological information had been gathered to

allow researchers to develop a tentative regional prehistory for the Central Valley that was to become known as the Central California Taxonomic System (CCTS). The CCTS was then expanded to correlate the archaeological sequences of the Sacramento River-San Joaquin River delta with those of the Bay Area, and the CCTS became the standard framework for understanding prehistory in the region for the next 20 years. With refinements, the CCTS is still applicable in some areas.

Fredrickson (1973, 1974) subsequently proposed the Archaic-Emergent temporal structure. This model is based on three basic divisions of prehistory for the Central Valley; Paleo-Indian, Archaic, and Emergent. Frederickson put specific emphasis on economic patterns, stylistic aspects, and temporally restricted regional phases to identify specific cultural entities.

Calibrated radiocarbon dates have since allowed for even greater refinement within these periods. Rosenthal, White, and Sutton (2007) thus identify five divisions in Central Valley prehistory; Paleo-Indian (11,550-8550 cal B.C.), Lower Archaic (8550-5550 cal B.C.), Middle Archaic (5550-550 cal B.C.), Upper Archaic (550 ca B.C. to cal A.D. 1100), and Emergent (cal A.D. 1100-historic period). For a detailed discussion of the specific characteristics of regional archaeological sequences that currently apply to the study area, see Rosenthal, White, and Sutton (2007) and others.

4.2 ETHNOGRAPHIC OVERVIEW

The Project is located within the traditional tribal territory of the Patwin. The Patwin are a linguistically defined group whose language is in the Penutian family, which also includes the Miwok, Maidu, Costanoan, Yokuts, and other groups in the region. The Patwin occupied an area measuring roughly 90 miles (north-south) by 40 miles (east-west) between the Sacramento River Valley and the San Pablo and Suisun Bays (Johnson 1978).

The largest Patwin political unit was the tribelet, which consisted of one primary village and several satellite villages. Villages were most often located near permanent water sources and were primarily occupied in winter with the population moving to temporary camps in the summer and fall to take advantage of seasonally available resources (Johnson 1978). The nearest recorded village location is that of Ululato, approximately 2.5 miles southwest of the Project near the center of the present-day City of Vacaville (Johnson 1978, Fig. 1:350).

Village activities were directed by a chief, who managed a wide variety of village economic and ceremonial activities. As with other northern Californian native groups, the Patwin relied on hunting, fishing, and gathering a wide variety of foods, especially deer and salmon. Acorns were a particularly important staple food. These were gathered from hill and mountain oaks, pulverized, and leached with cold water for processing into bread or soup with cooking stones (Johnson 1978). Flat stone slabs and wooden mortars were used to process acorns. Baskets were used for transportation and as milling hoppers. Flaked obsidian and, occasionally chert, was used in the production of scrapers, knives, projectile points, and other tools. Bone was used to make basketry awls and harpoon points (Johnson 1978).

4.3 HISTORIC OVERVIEW

The historic period in California begins with the first sporadic incursions by Spanish explorers. These early expeditions were followed by the establishment of permanent settlements along the coast by Spanish missionaries. During these periods of initial contact and missionization, indigenous populations were decimated by the introduction of Old World diseases and traditional lifeways were eroded as local populations were absorbed into the growing Spanish Missions. Priests from both Mission Dolores (established in 1776 in San Francisco) and Mission San Jose

(established 1797 in Fremont) actively recruited from among the Patwin population, with 1,800 Patwin neophytes recorded at Mission Dolores, including some from the village of Ululato (Johnson 1978). A series of government policies and independent efforts to forcibly remove indigenous communities followed in the wake of the dissolution of the missions, and indigenous populations continued to decline.

Spaniards were the earliest Euro-American settlers in the area, attracted to Solano County's rich agricultural land. Among them was Manuel Vaca, for whom Vacaville is named, and Juan Felipe Pena, who received the Rancho Los Putos land grant from Governor Manuel Micheltorena in 1843 on which the Project is located (Ogden 1862). Pena developed a large cattle ranching operation on the Rancho after receiving the land.

Following the acquisition of California by the United States as part of the Treaty of Guadalupe Hidalgo and the coincidental discovery of gold at Sutter's Mill, both occurring in 1848, waves of new emigrants moved west hoping to find riches during the Gold Rush. Many emigrants never made it to the gold fields, opting instead to remain in the fertile Central Valley and founding numerous settlements in the area (Central Solano County Heritage Commission 1977).

5.0 METHODS AND FINDINGS

5.1 NATIVE AMERICAN CONSULTATION

On September 3, 2019, Stantec sent a Sacred Lands File search request to the NAHC. The Sacred Lands File maintained by the NAHC contains information regarding additional resources or locations of importance to the Native Americans who have traditionally resided within the project area. The NAHC responded on September 16, 2019 stating that the results of the Sacred Lands File search were negative. The NAHC also provided a list of three Native American individuals/organizations for further consultation, Chairman Charlie Wright of the Kletsel Dehe Band of Wintun Indians, Chairman Gene Whitehouse of the United Auburn Indian Community of the Auburn Rancheria, and Chairman Anthony Roberts of the Yocha Dehe Wintun Nation. On September 24, 2019, certified letters were sent to each of the contacts provided. Mr. Wright and Mr. Whitehouse both stated that they are not aware of any resources within the project area and had no further comment. Matthew Lowell, Jr., Tribal Treasurer and Historic Preservation Officer for the Yocha Dehe Wintun Nation, responded on September 23, 2019 that the project is within Yocha Dehe tribal territory. Mr. Lowell further stated that tribal monitoring is not recommended but that Tribal Monitor Supervisor Robert Geary should be engaged to provide pre-construction cultural awareness training to project personnel. Outreach documentation can be found in Appendix A.

AB 52 consultation under CEQA, including identification of potential TCRs, will be conducted by the lead state agency and is forthcoming.

5.2 CHRIS RECORD SEARCH AND DESKTOP REVIEW

To identify the presence or absence of potentially significant cultural resources in the project area that could be considered historical resources for the purposes of the CEQA, a California Historical Resources Information System (CHRIS) record search, a desktop review of historic-era documents, and a field survey of the proposed project area were conducted. The methods used are described below.

Stantec archaeologist Leven Kraushaar performed a records search at the Northwest Information Center (NWIC) of the CHRIS on August 23, 2019 (NWIC File No. 19-0351) to obtain and review previous cultural resource records, cultural resource studies, and any additional documentation pertaining to properties located within a 0.25-mile extent of the project area. The following lists and databases were also reviewed:

- Office of Historic Preservation Directory of Properties in the Historic Property Data File for Solano County, California
- National Register of Historic Places
- CRHR
- California Inventory of Historic Resources (California 1998)
- California Historical Landmarks (California 1990)
- California Points of Historical Interest (California 1992)
- Caltrans Historic Bridge Inventory and GIS Database (Caltrans 2015)

In addition to conducting a record search at the NWIC, Stantec also reviewed historical maps, aerial photography, and historical literature to determine past land use activities within the project area that could indicate the likelihood of encountering cultural resources.

5.3 CHRIS RECORD SEARCH RESULTS

The record search conducted at the NWIC failed to identify any cultural resources within 0.25 mile of the project area. Five studies have been previously conducted within the parcel. Review of these studies indicated that 100% of the project area has been previously surveyed (see Table 1).

Table 1: Previous Studies Identified Through the NWIC Records Search

Author	Year	Report Title	Report Reference Number
Treganza, A.E., R.L. Edwards, and T.F. King	1965	Archaeological Survey and Excavation Along the Tehama-Colusa Canal, Central California.	S-5156
Seldner, Dana McGowen	1985	A Preliminary Archaeological Survey of the Northeast Sector, Vacaville, Solano County, California.	S-7675
Corbett, M. and W. Kostura	1996	Historic Property Survey Report, 10-SOL-I-80 KP47.48-49.08 EA 325400, Improvements to I-80.	S-19521
Ilic, N and D. Chavez	1998	Archaeological Survey Report, 04-SOL-505 PM 1.6 EA 0S9601, Repair of Three Slipouts Adjacent to the Shoulder of Northbound Route 505.	S-21305

Author	Year	Report Title	Report Reference Number
Jensen, S.M.	2006	Archaeological Inventory Survey, Vacaville Medical Office Development Project, c. 3.41 Acres, Vacaville, Solano County, California.	S-32569

In addition to the studies identified within the project area, four studies have been conducted within 0.25 mile of the Project (see Table 2).

Table 2: Additional Studies Identified Within 0.25-mile of the Study Area

Author	Year	Report Title	Report Reference Number
Holman, M.P.	1984	Leisure Town Freeway Exit Archaeological Reconnaissance (Letter Report)	S-7086
Holson, J. and L. Hager	1987	A Cultural Resources Study for the Vaca Dixon-Moraga 230 kV Transmission Line Reconductoring Project, Contra Costa, Napa, and Solano Counties, California	S-9124
Derr, E.H.	1992	A Cultural Resources Study for the Kaiser Vacaville Medical Center EIR, Solano County, California	S-14196
Hildebrandt, W., J. Meyer, and J. Costello	2012	Survey and Extended Phase I Investigations for the Solano 80 Corridor Project, Solano County, California, EA/ID 4A2500/0400001121, Solano 80 Post Miles 0.0-44.4	S-38627

Historic aerial photographs from 1968, 1993, and 2005 show the parcel as undeveloped, with Akerly Drive and New Horizons Way appearing between 1993 and 2005. Though no structures are visible in the photographs, disturbances from agricultural use are present in the 1968 aerial, and grading and other mechanical disturbances are apparent in 1993 and 2005. The location of Horse Creek seems to have shifted north toward the study area between 1968 and 1993 and appears to have been modified and straightened between 1993 and 2005 (NETR 2019). A small mound seems to appear near the center of the parcel in 2009, and the parcel appears to have been graded several times between aerials taken in 2005, 2010, 2012, 2014, and 2016 (NETR 2019).

5.4 FIELD METHODS

On August 23, 2019, Stantec archaeologist Kelsey Scott conducted a pedestrian survey of the parcel in an effort to identify and record any potential cultural resources within the study area. The parcel was surveyed in east-west

oriented transects spaced at approximately 10 meters to ensure maximum ground coverage. The banks of Horse Creek, though just outside of the APE, were also examined. Observations were recorded with an iPad 7 using the ESRI Collector application with an EOS Arrow 100 Global Positioning System device capable of providing sub-meter accuracy.

All exposed surfaces were examined for evidence of prehistoric or historic-period archaeological sites or buried cultural deposits. Evidence of prehistoric deposits may include, but is not limited to, changes in soil color and texture, carbon, ash, stone tools (e.g. projectile points, scrapers, and knives), fire affected rock, and fragments of bone, shell, and flaked or ground stone. Evidence of historic-period resources may include, but is not limited to, alignments of stone or brick, foundation elements, earthworks, cans with soldered seams, and fragments of ceramic, glass, metal, and brick. The presence of certain plants (e.g. fruit and nut trees and ornamental plants) may also indicate historic-period activities. No subsurface testing was undertaken in the course of this survey; however, all areas of recent disturbance, including rodent activity and vehicle ruts, were closely examined and trowel scrapes were applied as necessary if vegetation or other groundcover was present.

5.4.1 Survey Results

The entire parcel was subjected to intensive reconnaissance level pedestrian field survey. Pedestrian survey transect spacing did not exceed 10 meters, and ground surface visibility was generally excellent due to the regular management of seasonal vegetation. Soils within the study area were found to consist of friable light yellowish-brown sandy loam with approximately 10 percent gravel. Clay and gravel content increased slightly with proximity to Horse Creek. A single mound of soil was present but was found to have been deposited on top of a layer of modern plastic mesh. Modern refuse, including plastic fragments, ceramic pipe fragments, metal pipe fragments, concrete, and machine parts were scattered across the study area. No cultural resources were identified.

Substantial ground disturbance resulting from the construction of East Akerly Drive and New Horizons Way, grading/recontouring, and tilling for vegetation management was noted across the entire parcel.



Photograph 1: Overview of the north half of the survey area from Akerly Drive. Facing west, Kelsey Scott, August 23, 2019.



Photograph 2: Overview of the south half of the survey area from Akerly Drive. Facing west, Kelsey Scott, August 23, 2019.



Photograph 3: Mounded soil on top of plastic mesh (center foreground) near the center of the study area. Facing southwest, Kelsey Scott, August 23, 2019.



Photograph 4: Disturbances including tilling and vehicle tracks. Facing west, Kelsey Scott, August 23, 2019.

5.5 BURIED SITE SENSITIVITY

The Project area is located almost exclusively on alluvial fans or levees of relatively recent age (Meyer and Rosenthal 2007, Figure 8:20; Koenig 1965). Soils forming after about 11,800 years ago are sensitive for prehistoric archaeological cultural deposits, as they represent periods of prehistory when humans are known to have lived in California. However, Jensen (2006) noted that the surface of the project area had been disturbed by bulldozing and appeared to have an overall low to moderate sensitivity. Current field investigations have confirmed the highly disturbed nature of the study area. Taking into account the disturbances and the lack of a permanent water source within the study area, the sensitivity for buried cultural deposits is low to moderate.

6.0 SUMMARY AND CONCLUSIONS

This cultural resources inventory has been prepared for the Home 2 Suites Hotel Project and includes the results of a record search and literature review, Native American consultation, and pedestrian survey. The record search did not identify any previously recorded resources within the study area or within 0.25-mile of the study area. The entire study area and much of the area within 0.25-mile of the study area has been previously surveyed.

The pedestrian survey performed by Stantec for this study did not identify any new cultural resources. As noted above, the study area was found to have been heavily disturbed by the construction of adjacent roads, grading and recontouring, and vegetation management. The likelihood of encountering cultural deposits is low to moderate.

There is, however, always a possibility that subsurface archaeological deposits exist in the project area. Buried archaeological sites may show no surface manifestation. Stantec recommends that if previously unidentified cultural resources are encountered during project implementation, the Inadvertent Discovery protocols in below should be followed.

6.1 INADVERTENT DISCOVERY

There is a possibility that subsurface archaeological deposits exist in the project area since archaeological sites may be buried and show no surface manifestation. Prehistoric resources include, but are not limited to, chert or obsidian flakes; projectile points; mortars; pestles; and dark friable soil containing bone dietary debris, heat-affected rock, or human burials. Historic resources may include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, which are often located on the surface or in old wells or privies.

Stantec recommends that if previously unidentified cultural resources are encountered during project implementation, altering the materials and their context shall be avoided. A professional archaeologist shall be contacted to evaluate the nature of the find within 24 hours of the discovery. In addition to an archaeologist, the Yocha Dehe Wintun Nation shall be notified of the discovery of any potential prehistoric or tribal cultural resources within 24 hours. A 50-foot buffer shall be put around the discovery until the assessment can be made. Project personnel should not collect, move, touch, or photograph cultural resources.

6.2 HUMAN REMAINS

Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial. Although unlikely, if human remains are encountered, all work must stop in the immediate vicinity of the discovered remains. The Solano County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed (PRC 7050). If the remains are deemed to be Native American and prehistoric, the Coroner must contact the NAHC so that a “Most Likely Descendant” can be designated and further recommendations regarding treatment of the remains provided.

7.0 REFERENCES

California, State of (California). 1990. California Historical Landmarks. Sacramento.

1992. California Points of Historical Interest. Sacramento.

1998. The California Inventory of Historic Resources. Sacramento.

California Department of Transportation (Caltrans). 2015. Historic Bridge Inventory. Online resource, https://dot.ca.gov/hq/structur/strmaint/historic.htm. Accessed September 2019.

Central Solano County Cultural Heritage Commission. 1977. Our Lasting Heritage. Online resource, https://www.vacavilleheritagecouncil.org/resources/read/7034/#page/n103/mode/2up. Accessed September 2019.

Corbett, M. and W. Kostura. 1996. Historic Property Survey Report, 10-SOL-I-80 KP47.48-49.08 EA 325400, Improvements to I-80. Prepared by Corbett and Minor. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Derr, E. 1992. A Cultural Resources Study for the Kaiser Vacaville Medical Center EIR, Solano County, California. Prepared by Cultural Resources Unlimited. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Fredrickson, D. 1973. Early Cultures of the North Coast of the North Coast Ranges, California. Ph.D. dissertation, Department of Anthropology, University of California, Davis.

1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. *The Journal of California Anthropology* 1(1): 41-54.

Griffith, G.E., J.M. Omernik, D.W. Smith, T.D. Cook, E. Tallyn, K. Moseley, and C.B. Johnson. 2016. Ecoregions of California: U.S. Geological Survey Open-File Report 2016–1021 with map, scale 1:1,100,000. Online resource, http://dx.doi.org/10.3133/ofr20161021. Accessed September 2019.

Hildebrandt, W., J. Meyer, J. Costello, P. Mikkelsen, and J. Berg. 2012. Survey and Extended Phase I Investigations for the Solano 80 Corridor Project, Solano County, California, EA/ID 4A2500/0400001121, Solano 80 Post Miles 0.0-44.4. Prepared by Far Western Anthropological Research Group, Inc. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Holman, M.P. 1984. Leisure Town Freeway Exit Archaeological Reconnaissance (Letter Report). Prepared by Holman and Associates. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Holson, J. and L. Hager. 1987. A Cultural Resources Study for the Vaca Dixon-Moraga 230 kV Transmission Line Reconductoring Project, Contra Costa, Napa, and Solano Counties, California. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Ilic, N. and D. Chavez. 1998. Archaeological Survey Report, 04-SOL0505 PM 1.6 EA 0S9601, Repair of Three Slipouts Adjacent to the Shoulder of Northbound Route 505. Prepared by David Chavez and Associates. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Jensen, S.M. 2006. Archaeological Inventory Survey, Vacaville Medical Office Development Project, c. 3.41 Acres, Vacaville, Solano County, California. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Johnson, P.J. 1978. Patwin. In California, edited by Robert F. Heizer, pp. 350-360. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Koenig, J.B. 1965. Geologic Map of California, 1:250,000 Scale, Sacramento Sheet. California Division of Mines and Geology.

Meyer, J. and J. Rosenthal. 2007. *Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4*. Prepared for Caltrans District 4 Office of Cultural Resources, Oakland, CA. Available from the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Moratto, M. 1984. California Archaeology. Academic Press, Inc. San Diego, California.

Nationwide Environmental Title Research (NETR). 2019. Historic Aerials. Online resource, www.historicaerials.com. Accessed September 2019.

Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. United States Department of Agriculture. Online resource, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed September 2019.

Ogden, H. 1862. Reports of Land Cases Determined in the United Stated District Court for the Northern District of California, Numa Hubert, San Francisco.

Rosenthal, J.S., G.G. White, and M.Q. Sutton. 2007. Chapter 10: The Central Valley. In *California Prehistory: Colonization, Culture, and Complexity*. Terry L. Jones and Kathryn A. Klar, editors, pp. 147-163. AltaMira Press, Lanham, Maryland.

Seldner, D.M. 1985. A Preliminary Archaeological Study if the Northeast Sector, Vacaville, Solano County, California. Prepared by the Archaeological Study Center, California State University, Sacramento. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

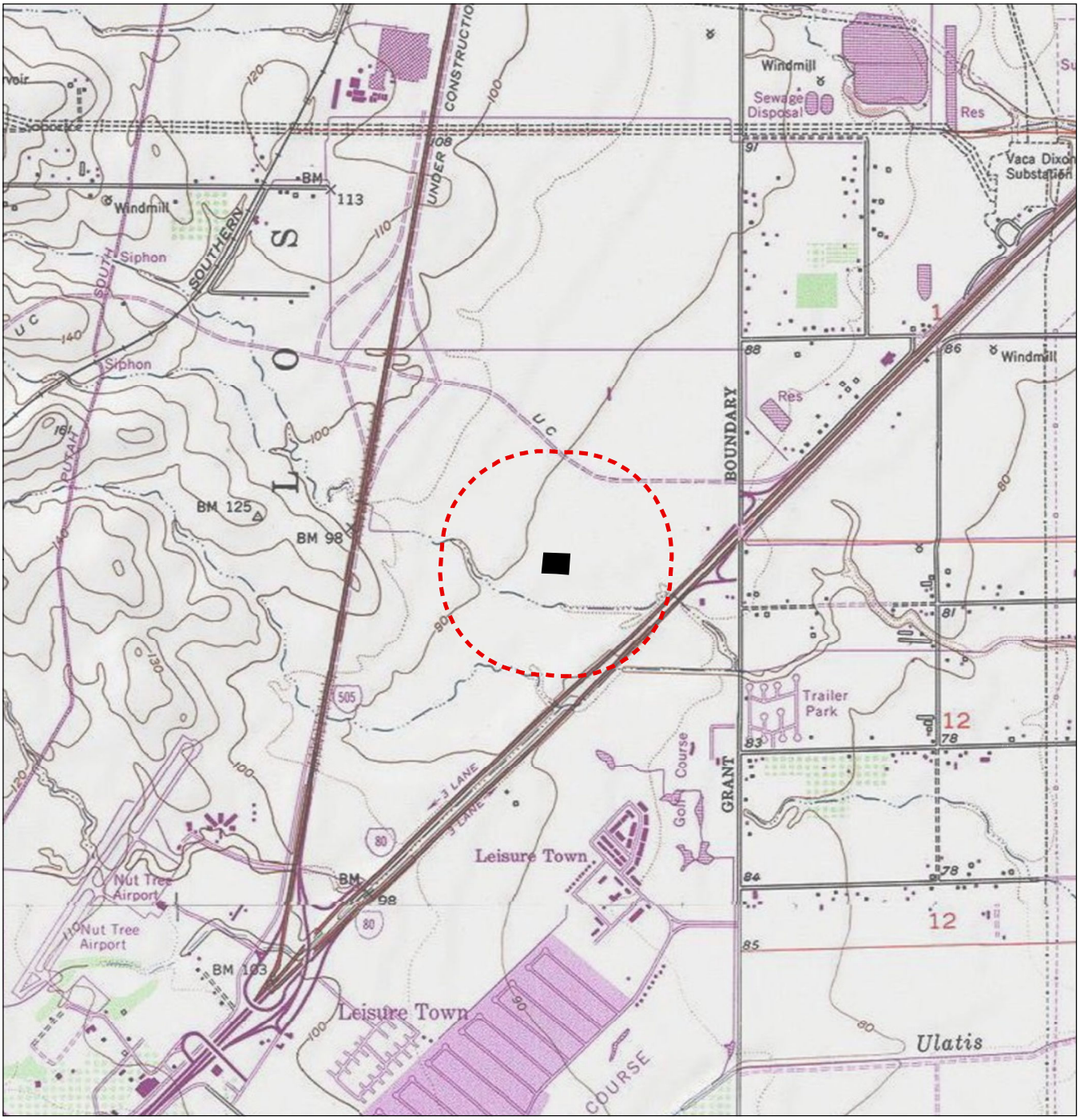
Treganza, A.E., R.L Edwards, and T.F. King. 1965. Archaeological Survey and Excavation Along the Tehama-Colusa Canal, Central California. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

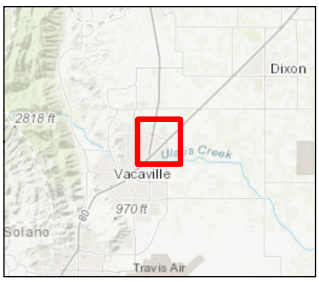
United States Geological Survey (USGS). 2019. Allendale, CA 7.5'-Series Topographic Quadrangle Map. Online resource, https://ngmdb.usgs.gov/topoview/viewer/#4/39.98/-100.06. Accessed September 2019.

Western Regional Climate Center (WRCC). 2019. Vacaville, California. Online resource, https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9200. Accessed September 2019.

FIGURES

Figure 1. Project Location Map





Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Data Sources:
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Project Area

Record Search Area (1/4-mile radius)

Map Information:
USGS 7.5-minute Quad: Allendale
Township: 6.0N
Range: 1.0W
Section: 11

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(At original document size of 8.5x11)
1:24,000

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Stantec

Project Location
Vacaville, CA

Prepared by PG on 2019-08-23
TR by AR on 2019-08-23

Client/Project
City of Vacaville
Ark Studio, Inc. Home2 Suites

Figure No.
1

Title
Project Location

V:\18571\Active\185704608\03 data\gis cad\gis\mxd\cultural\Fig 1 ProjectLocation.mxd Revised: 2019-09-09 By: pglendening

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APPENDICES

Appendix A NATIVE AMERICAN CONSULTATION DOCUMENTS

Native American Outreach Correspondence* Record for the City of Vacaville Home 2 Suites Hotel Project			
Contact & Affiliation	**Date of Contact**	**Method of Contact**	**Description**
NAHC	09/03/2019	Email	Stantec archaeologist Leven Kraushaar sent a description of the Project and a Project location map to the NAHC along with a Sacred Lands File Search and Native American Contacts List Request Form.
	09/16/2019	Email	The NAHC responded with negative search results and a list of three (3) Native American organizations for further consultation.
Charlie Wright, Chairperson Kletsel Dehe Band of Wintun Indians	09/24/2019	Certified Letter	Mr. Kraushaar sent a certified letter to the address provided by the NAHC inviting the Tribe to consult on the Project. A Project description and location maps were included.
	11/25/2019	Telephone	A call placed to the number provided by the NAHC, (530) 473-3274, was transferred to Chairperson Wright. Mr. Wright stated that the Tribe is not aware of any resources in the Project vicinity and that he has no comments at this time. He did request, however, that the Tribe be informed if any resources are discovered during Project implementation.
Gene Whitehouse, Chairperson United Auburn Indian Community of the Auburn Rancheria	09/24/2019	Certified Letter	Mr. Kraushaar sent a certified letter to the address provided by the NAHC inviting the Tribe to consult on the Project. A Project description and location maps were included.
	11/25/2019	Telephone	A call placed to the number provided by the NAHC was transferred to Anna Starkey in the Tribe's cultural resources department. Ms. Starkey requested a digital copy of the notification letter and Project location map.
	11/25/2019	Email	Mr. Kraushaar sent a copy of the letter to Ms. Starkey at astarkey@auburnrancheria.com.
	11/25/2019	Email	Ms. Starkey responded, stating that the Project is outside of the Tribe's territory and that they have no comments on the Project moving forward.
Anthony Roberts, Chairperson Yocha Dehe Wintun Nation	09/24/2019	Certified Letter	Mr. Kraushaar sent a certified letter to the address provided by the NAHC inviting the Tribe to consult on the Project. A Project description and location maps were included.
	09/23/2019	Letter	Matthew Lowell, Jr., Tribal Treasurer and Historic Preservation Officer for the Yocha Dehe Wintun Nation, responded by mail stating that the Project is within their tribal territory and, while they are not aware of any known cultural resources within the Project area, they recommend cultural sensitivity training for any Project personnel. Mr. Lowell recommended that Robert Geary, a Tribal Monitor Supervisor, provide the training. The Yocha Dehe do not recommend monitoring at this time.
	11/13/2019	Letter	The Yocha Dehe Tribal Preservation Office sent an additional letter in response to AB 52 outreach efforts by the City. The letter requested that two edits be made to the mitigation measures for the project (that in addition to an archaeologist, the Yocha Dehe Wintun Nation be contacted to evaluate any discoveries within 24 hours and that the name of the coroner be changed). The Tribe also asked again that Mr. Geary should be contacted to provide cultural awareness training prior to construction.

*Correspondence was conducted by Stantec Archaeologist Leven Kraushaar, MA.

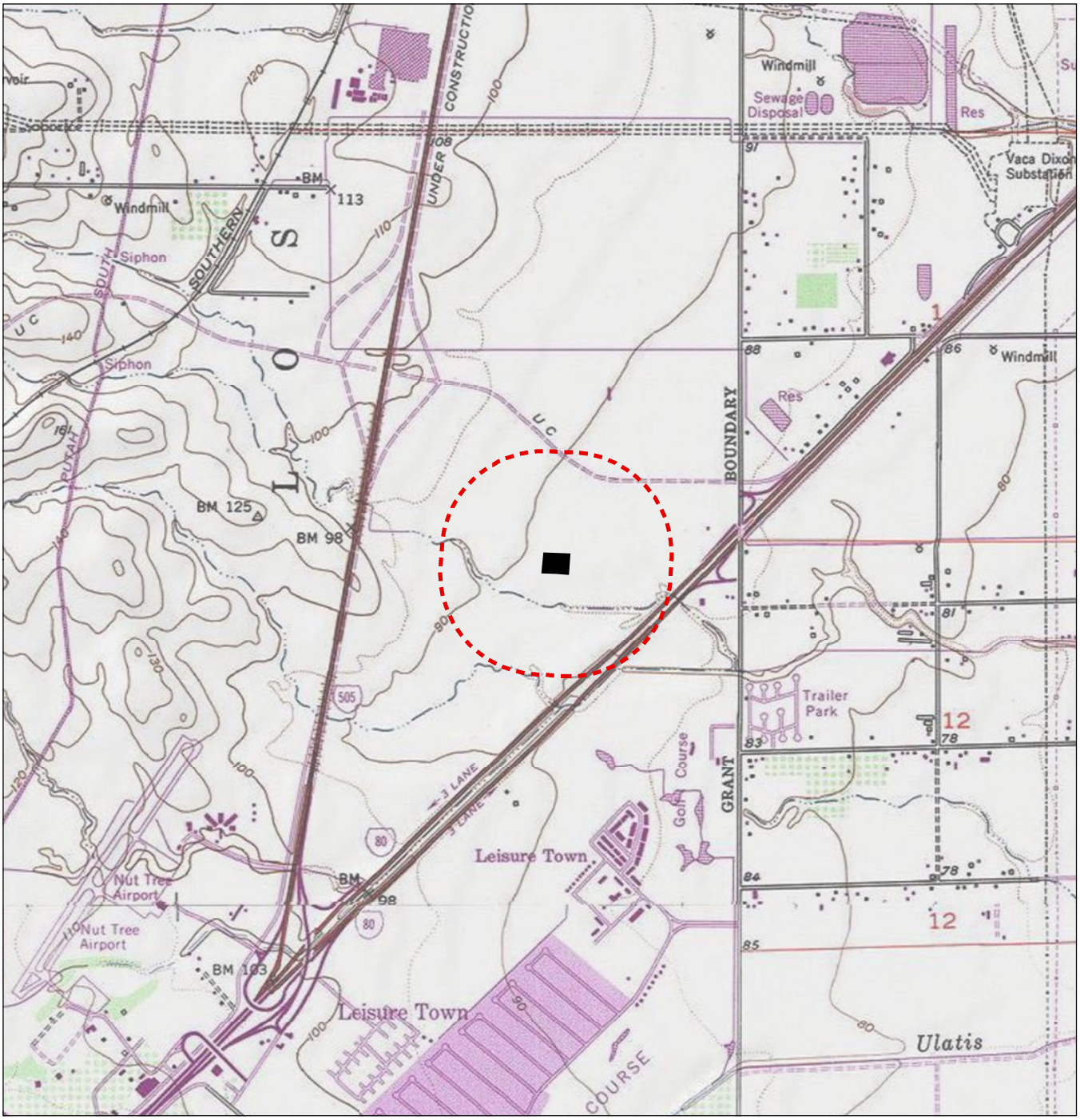
Kraushaar, Leven

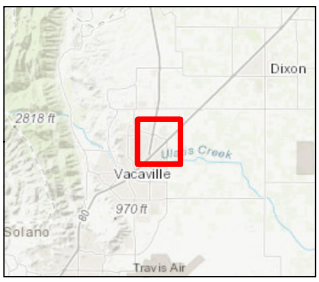
From: Kraushaar, Leven
Sent: Tuesday, September 3, 2019 2:46 PM
To: nahc@nahc.ca.gov
Subject: City of Vacaville Home 2 Suites Hotel Project
Attachments: NAHC Contact Form Homes 2 Suites Hotel Project 20190903.pdf; records_search_map.pdf

Good afternoon,

Stantec Inc. is assisting the City of Vacaville to prepare a cultural resources inventory for the proposed Home 2 Suites Hotel Project. We are requesting a search of the Sacred Lands File and a list of Native American contacts for the project area. The SLF request form and a map of the project location and Area of Potential Effects are attached to this email. Please feel free to contact me if you require any additional information.

Thank you,
Leven





Notes
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2. Data Sources:
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Project Site

Search Area (1/4-mile radius)

Map Information:
USGS 7.5-minute Quad: Allendale
Township: 6.0N
Range: 1.0W
Section: 11

0 1,000 2,000 Feet
(At original document size of 8.5x11)
1:24,000

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Stantec

Project Location
Colusa, CA

Prepared by PG on 2019-08-23
TR by AR on 2019-08-23

Client/Project
City of Vacaville
Vacaville Home2 Suites

Figure No.

Title
Cultural Resources Records Search Map

V:\18571Active\185704608\03 data\gis cad\gis\mxd\culturalrecords search map.mxd Revised: 2019-08-23 By: pglendening

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NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

September 16, 2019

Leven Kraushaar
Stantec Consulting, Inc.

VIA Email to: leven.kraushaar@stantec.com

RE: City of Vacaville/Ark Studio, Inc. Home 2 Suites Hotel Project, Solano County

Dear Mr. Kraushaar:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Staff Services Analyst

Attachment

Native American Heritage Commission
Native American Contacts List
9/16/2019

Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
Charlie Wright, Chairperson
P.O. Box 1630 Wintun / Patwin
Williams ,CA 95987
(530) 473-3274 Office
(530) 473-3301 Fax

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road Maidu
Auburn ,CA 95603 Miwok
bguth@auburnrancheria.com
(530) 883-2390 Office
(530) 883-2380 Fax

Yocha Dehe Wintun Nation
Anthony Roberts, Chairperson
P.O. Box 18 Wintun (Patwin)
Brooks ,CA 95606
aroberts@yochadehe-nsn.gov
(530) 796-3400
(530) 796-2143 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

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, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans Tribes for the proposed:
City of Vacaville/Ark Studio, Inc. Home 2 Suites Hotel Project, Solano County.

September 23, 2019
File: 185704608

Attention: Charlie Wright, Chairperson
Cortina Rancheria – Kletsel Dehe Band of Wintun Indians
P.O. Box 1630
Williams, CA 95987

Dear Chairperson Wright,

Reference: City of Vacaville Home 2 Suites Vacaville Hotel Project

Ark Studio, Inc. proposes to develop an approximately 2.26-acre parcel located northeast of the City of Vacaville (City) in Solano County, California. The parcel can be found on the Allendale, CA 7.5-minute United States Geological Survey quadrangle map. It is located near the intersection of New Horizons Way and Akerly Drive, approximately 1.25 miles northeast of the Nut Tree Airport, 0.45-mile east of I-505, and 0.3-mile west of I-80 (see attached Project Location map).

The project calls for the subdivision of the parcel and the construction of a four-story, 107-room hotel. Onsite amenities would include an indoor swimming pool, fitness room, and dining area. The project would also include 135 surface parking spaces, landscaping, and utilities.

The project is within the Vaca Valley Business Park Policy Plan area, and Stantec is assisting the City in the identification of any cultural resources that may be affected by the proposed project. A records search conducted at the Northwest Information Center of the California Historical Resources Information System did not identify any previously recorded resources within the project area, and no cultural resources were identified during a pedestrian survey performed by a Stantec archaeologist. A search of the Sacred Lands File performed by the NAHC was also negative for sacred sites within the project area. However, the NAHC identified you as possibly having additional specific knowledge of this location.

In order to verify that all potential resources of concern to Native American communities are identified and considered in the planning and implementation of the project, we respectfully request any information you can provide regarding the location and nature of cultural resources that may be located within or immediately adjacent to the project area. Specifically, we are seeking you input for the following types of resources:

- Prehistoric archaeological sites and features;
- Sacred lands or locations that are important in Native American culture;
- Places that the Native American community continues to use for ongoing cultural practices, and;
- Historic-period resources.

Reference: City of Vacaville Home 2 Suites Vacaville Hotel Project

Please also let us know if you have any specific questions or concerns regarding this project so that we can incorporate them into the cultural resources study currently being prepared. We understand that the nature and location of these resources is highly sensitive. Any information you provide will be handled accordingly.

Regards,

Leven Kraushaar, M.A.
Archaeologist
Phone: (707) 318-8233
leven.kraushaar@stantec.com

Attachment: Project Location Map

September 23, 2019
File: 185704608

Attention: Gene Whitehouse, Chairperson
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Dear Chairperson Whitehouse,

Reference: City of Vacaville Home 2 Suites Vacaville Hotel Project

Ark Studio, Inc. proposes to develop an approximately 2.26-acre parcel located northeast of the City of Vacaville (City) in Solano County, California. The parcel can be found on the Allendale, CA 7.5-minute United States Geological Survey quadrangle map. It is located near the intersection of New Horizons Way and Akerly Drive, approximately 1.25 miles northeast of the Nut Tree Airport, 0.45-mile east of I-505, and 0.3-mile west of I-80 (see attached Project Location map).

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Regards,

Leven Kraushaar, M.A.
Archaeologist
Phone: (707) 318-8233
leven.kraushaar@stantec.com

Attachment: Project Location Map

September 23, 2019
File: 185704608

Attention: Anthony Roberts, Chairperson
Yocha Dehe Wintun Nation
P.O. Box 18
Brooks, CA 95606

Dear Chairperson Roberts,

Reference: City of Vacaville Home 2 Suites Vacaville Hotel Project

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Regards,

Leven Kraushaar, M.A.
Archaeologist
Phone: (707) 318-8233
leven.kraushaar@stantec.com

Attachment: Project Location Map

Track your package
Data provided by USPS

Tracking number 70171450000207944425

Delivered
October 04, 10:54AM
Williams, CA

View details on USPS

Call 1-800-275-8777

Track another package

Track your package
Data provided by USPS

Tracking number 70171450000207944432

Delivered
September 26, 11:04AM
Auburn, CA

View details on USPS

Call 1-800-275-8777

Track another package

Track your package

Data provided by USPS

Tracking number 70171450000207944449

Delivered

September 26, 11:15AM

Brooks, CA

View details on USPS

Call 1-800-275-8777

Track another package

YOCHA DEHE
CULTURAL RESOURCES

October 7, 2019

Stantec
Attn: Leven Kraushaar, Archaeologist
3301 C Street, Suite 1900
Sacramento, CA 95816

RE: Home 2 Suites Hotel Project

Dear Mr. Kraushaar:

Thank you for the project notification dated, September 23, 2019, regarding cultural information on or near the proposed Home 2 Suites Hotel Project, Vacaville, Solano County. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, Yocha Dehe Wintun Nation is not aware of any known cultural resources near this project site and a cultural monitor is not needed. However, if any new information is available or cultural items are found, please contact the Cultural Resources Department. In addition, we recommend cultural sensitivity training for any pre-project personnel. Additionally, we have attached our Burial Treatment Protocol for your review.
Please contact the individual listed below to schedule the cultural sensitivity training, prior to the start of the project.

Robert Geary, Tribal Monitor Supervisor
Yocha Dehe Wintun Nation
Office: (530) 215-6180
Email: rgeary@yochadehe-nsn.gov

Please refer to identification number YD - 09262019-02 in any correspondence concerning this project.

Thank you for providing us the opportunity to comment.

Sincerely,

Matthew Lowell, Jr.
Tribal Treasurer/Tribal Historic Preservation Officer

Kraushaar, Leven

From: Kraushaar, Leven
Sent: Monday, November 25, 2019 3:19 PM
To: astarkey@auburnrancheria.com
Subject: City of Vacaville Home 2 Suites Hotel Project
Attachments: Vacaville_Home_2_Suites_NA_Letter_Whitehouse.pdf; Fig_1_ProjectLocation_lk.pdf

Good afternoon,

Thank you for taking the time to call me back. I've attached a copy of the letter and a project location map. Please feel free to call or email me anytime if there's anything else I can do for you.

Thanks again,
Leven

Leven Kraushaar MA
Archaeologist

Stantec
1383 North McDowell Blvd., Ste. 250
Petaluma, CA 94954
(707) 318-8233
Cell: (707) 835-3630
leven.kraushaar@stantec.com

Kraushaar, Leven

From: Anna Starkey <astarkey@auburnrancheria.com>
Sent: Monday, November 25, 2019 3:28 PM
To: Kraushaar, Leven
Subject: RE: City of Vacaville Home 2 Suites Hotel Project
Attachments: UAIC_Geographic_Area_of_Traditional_Cultural_Affiliation_2015Oct.pdf

Hello Leven,
I apologize for not getting back to you when you sent your initial letter. This project is outside of UAIC's traditional cultural territory and do not consult on such projects. I typically will let you know if we are declining to consult and why, but somehow this one was missed.

I attached a map of UAIC's traditional cultural territory for your future reference. Generally, we tend to focus our efforts closer to the tribe's Rancheria in Auburn.

Thank you for considering UAIC in assessing impacts to tribal cultural resources.
Very best,
Anna Starkey

Anna M. Starkey, M.A., RPA
Cultural Regulatory Specialist
Tribal Historic Preservation Department| UAIC
10720 Indian Hill Road
Auburn, CA 95603
Direct line: (916) 251-1565 | Cell: (530) 863-6503
astarkey@auburnrancheria.com |www.auburnrancheria.com

From: Kraushaar, Leven <Leven.Kraushaar@stantec.com>
Sent: Monday, November 25, 2019 3:19 PM
To: Anna Starkey <astarkey@auburnrancheria.com>
Subject: City of Vacaville Home 2 Suites Hotel Project

Good afternoon,

Thank you for taking the time to call me back. I've attached a copy of the letter and a project location map. Please feel free to call or email me anytime if there's anything else I can do for you.

Thanks again,
Leven

Leven Kraushaar MA
Archaeologist

Stantec
1383 North McDowell Blvd., Ste. 250
Petaluma, CA 94954

(707) 318-8233
Cell: (707) 835-3630
leven.kraushaar@stantec.com

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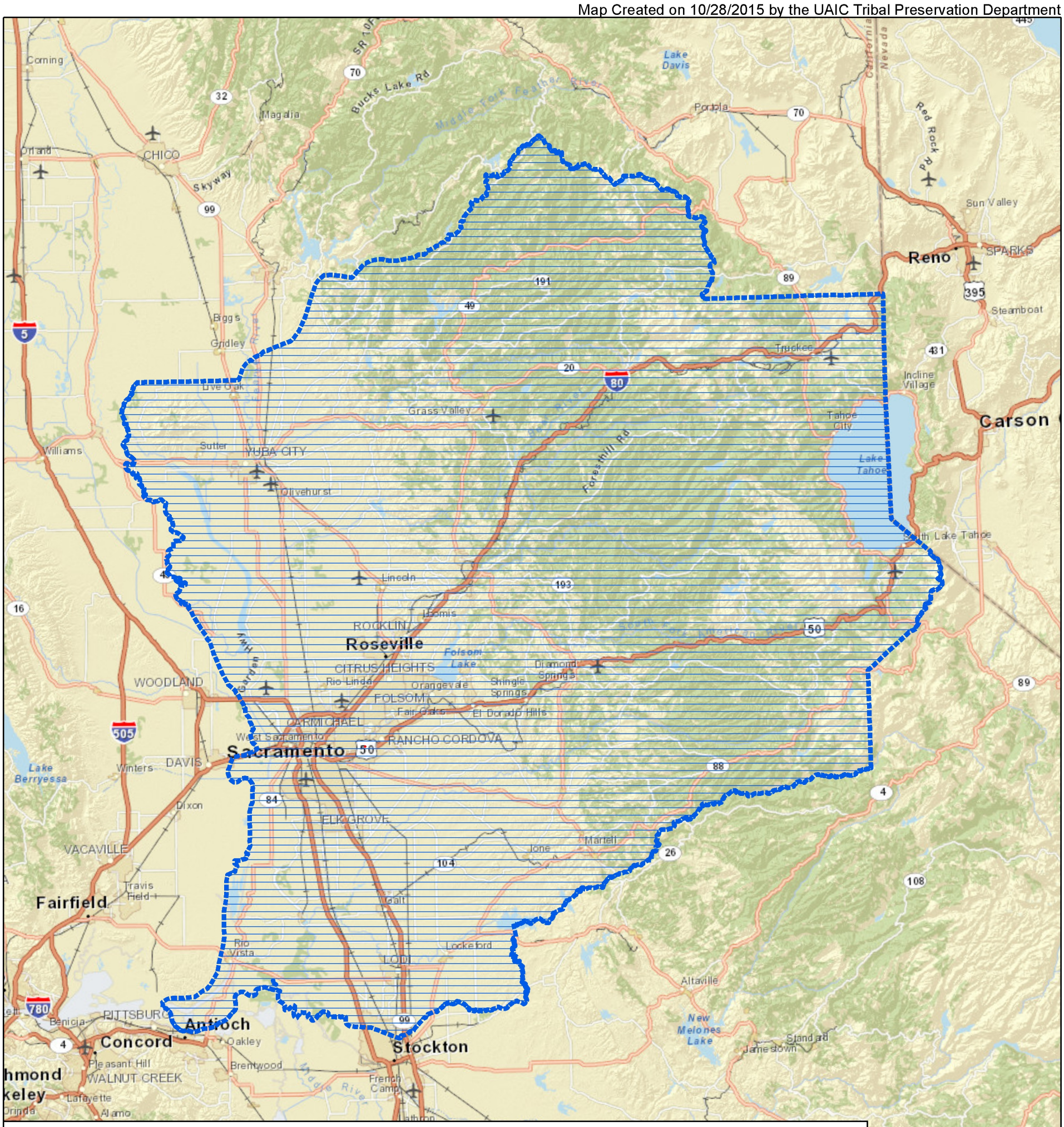
UAIC Geographic Area of Traditional and Cultural Affiliation

(for the purposes of California AB 52)

This area includes all of Amador, El Dorado, Nevada, Placer, Sacramento, Sutter and Yuba counties as well as portions of Butte, Plumas, San Joaquin, Sierra, Solano, and Yolo counties.

Map Created on 10/28/2015 by the UAIC Tribal Preservation Department



* The UAIC Geographic Area of Traditional and Cultural Affiliation boundary line is dashed to indicate that the boundary may change as affiliated resources are discovered or added, for example Valley and Sierra Miwok territory extends farther south.

This map is no substitute for direct consultation with UAIC prior to considering any proposed project or commencing any archaeological activities in or around sensitive areas.

Note: While we make every effort to identify Tribal Cultural Resources that exist within the UAIC Geographic Area of Traditional and Cultural Affiliation, it is highly probable that there are additional, older sites that we have not yet identified due to restricted access or other reasons or that agricultural or construction activities have distributed burials and cultural materials beyond the previously known boundaries of these sites. Even if these materials are in a disturbed condition, they still retain cultural value to UAIC and should be respected and protected. Because of this, thorough survey with a qualified Native American Monitor to confirm site boundaries and search for unknown sites is critical. This survey should be conducted after consultation with the Tribe and prior to the final determination of the type of environmental document to be used.

YOCHA DEHE
CULTURAL RESOURCES

November 13, 2019

City of Vacaville - Planning Division
Attn: Albert Enault, Associate Planner
650 Merchant Street
Vacaville, CA 95688

RE: Home 2 Suites Vacaville Hotel Project

Dear Mr. Enault:

Thank you for submitting the cultural resources report regarding cultural information on or near the proposed Home 2 Suites Vacaville Hotel Project, Vacaville, Solano. We appreciate your effort to contact us and wish to respond.

Based on the information provided, Yocha Dehe Wintun Nation is not aware of any known cultural resources near this project site and a cultural monitor is not needed. However, if any new information is available or cultural items are found, please contact the Cultural Resources Department.

The Tribe would also like to request that the edits on Attachment I be incorporated in to the mitigation measures for this project. In addition, we have included the Tribes burial treatment protocol for your review and recommend cultural sensitivity training for any pre-project personnel.

Please contact the individual listed below to schedule the cultural sensitivity training, prior to the start of the project.

Robert Geary, Tribal Monitor Supervisor
Yocha Dehe Wintun Nation
Office: (530) 215-6180
Email: rgeary@yochadehe-nsn.gov

Please refer to identification number YD-09262019-02 in any correspondence concerning this project.

Thank you for providing us the opportunity to comment.

Sincerely,

Tribal Historic Preservation Officer

RECEIVED
DEC 0 2 2019
CITY OF VACAVILLE
PLANNING DIVISION

YOCHA DEHE
CULTURAL RESOURCES

Attachment I

Page 11 - Section 6.1 - Inadvertent Discovery

- Yocha Dehe Wintun Nation, in addition to an archaeologist, shall be contacted to evaluate the nature of the find within 24 hours of the discovery.
- Project personnel shall not take pictures in addition to not collecting, moving, or touching cultural resources.

Page 12 - Section 6.2 – Human Remains

- Instead of contacting the Humboldt County Coroner, the Solano County Coroner shall be contacted in the event human remains are found.

APPENDIX F

Diesel Fuel Consumption Rates for Off-Road Construction Equipment and On-Road Vehicles

Diesel Fuel Consumption Rates
Offroad Usage

Formula:

$$LPMH = (K \times GHP \times LF) \div KPL$$

Constants:

Desc	Symbol	Quantity	Units			
fuel consumption	K =	0.17	kg/brake hp-hour	1 Liter =	0.264172	gallons
weight	KPL =	0.84	kg/liter			

Construction Equipment

Phase / Type	GHP	LF	LPMH	GPH	Quantity	hrs/day	Total Days	Total Fuel (gals)
Demolition								
Concrete/Industrial Saws	81	0.73	11.97	45.30	0	8	20	0
Rubber Tired Dozers	247	0.40	20.00	75.69	0	8	20	0
Tractors/Loaders/Backhoes	97	0.37	7.26	27.50	0	8	20	0
Subtotal								*0*
Site Preparation								
Graders	187	0.41	15.52	58.74	1	8	3	1,410
Scrapers	367	0.48	35.65	134.96	1	8	3	3,239
Tractor/loader/backhoe	97	0.37	7.26	27.50	1	7	3	577
Subtotal								*5,226*
Site Grading								
Graders	187	0.41	15.52	58.74	1	8	6	2,819
Rubber Tired Dozers	247	0.4	20.00	75.69	1	8	6	3,633
Tractors/Loaders/Backhoes	97	0.37	7.26	27.50	2	7	6	2,310
Subtotal								*8,762*
Building Construction								
Cranes	231	0.29	13.56	51.32	1	8	220	90,324
Forklifts	89	0.2	3.60	13.64	2	7	220	42,000
Generator Sets	84	0.74	12.58	47.62	1	8	220	83,812
Tractors/Loaders/Backhoes	97	0.37	7.26	27.50	1	6	220	36,294
Welders	46	0.45	4.19	15.86	3	8	220	83,731
Subtotal								*336,162*
Paving								
Cement and Mortar Mixers	9	0.56	1.02	3.86	1	8	10	309
Pavers	130	0.42	11.05	41.83	1	8	10	3,346
Paving Equipment	132	0.36	9.62	36.40	1	8	10	2,912
Rollers	80	0.38	6.15	23.29	2	8	10	3,726
Tractors/Loaders/Backhoes	97	0.37	7.26	27.50	1	8	10	2,282
Subtotal								*12,576*
Architectural Coating								
Air Compressors	78	0.48	7.58	28.68	1	6	10	*1,721*

Total Diesel Consumption ***364,447***

Diesel Fuel Consumption Rates
Onroad Usage

Vehicle Type	Percent of Vehicle Trips	Daily Vehicle Miles Traveled	Annual Vehicle Miles Traveled	Average Fuel Economy (miles/gallon)	Total Daily Fuel Consumption (gallons)	Total Annual Fuel Consumption (gallons)
Passenger Cars	58%	1,563	570,637	34.2	46	16,685
Light Trucks	21%	566	206,481	26.2	22	7,881
Light-Heavy to Heavy-Heavy Diesel Trucks	19%	510	186,111	6.1	84	30,510
Other	1%	19	6,991	6.1	3	1,146
Motorcycles	1%	18	6,457	50	0	129
Total	100%	2,676	976,676	-	154	**56,352**

Onroad construction diesel usage

Type	Vehicle type	Number of trips	Trip Length	Miles Travelled	Total Fuel Consumption
Worker Trips	Light Trucks	11,354.00	10.80	122,623.20	4,680.27
Vendor trips	Light-Heavy to Heavy-Heavy Diesel Trucks	5,060.00	7.30	36,938.00	6,055.41
					10,735.68

APPENDIX G

Geotechnical Investigation Report

Geotechnical Investigation Report for
New Four-Story Commercial Building

Prepared for

3700 New Horizons Way,
Vacaville, California 95688

By

Achievement Engineering Corp.
2455 Autumnvale Drive, Unit E
San Jose, California, 95131

Project Number: 3711
Date: March 11, 2019
Rev: 01

Project Number: 3711 – Rev 01
Date: March 11, 2019

Sharyar Ibrahim
3S Hospitality, LLC
2051 Diablo Rd.
Danville, CA 94526

Subject: Geotechnical Report for Proposed Hotel at
3700 New Horizons Way
Vacaville, California 95688

Dear Sir,

Achievement Engineering Corp. (AEC) is pleased to submit this Geotechnical Report for the above-referenced project. The purpose of this study was to evaluate the subsurface soil conditions at the proposed site and develop recommendations for the design and construction of the structure foundations.

We appreciate the opportunity to be of service to you on this project and would be happy to discuss our findings with you. We look forward to serving as your geotechnical/ environmental engineer on your future projects.

Respectfully Submitted,
Achievement Engineering Corp.



Sadaf M. Safaai , PE
Project Engineer

Copies: Sharyar Ibrahim 3S WA OP, LLC
Reza Kabul Arc Studio INC.

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Exhibit I – Boring Logs

Exhibit II - Lab Results

Exhibit III - Maps

Exhibit IV – USGS Seismic Design

Exhibit V – Shallow Foundation Design

1- Introduction

Achievement Engineering Corp. (AEC) has performed a geotechnical investigation at 3700 New Horizons Way, Vacaville, CA 95688. This report discusses the findings of the geotechnical investigation program, including the site soils and groundwater presence, and presents recommendations for the design and construction of the foundation of the proposed structure.

The objective of this report is to evaluate the characteristics of the subsurface strata and to obtain geotechnical parameters for the design of the foundation.

The following report highlights the significant findings and conclusions representing our best professional judgment based on information and data available to us during the course of this investigation.

1-1- Project Description

The purpose of this study was to investigate the subsurface soil and groundwater presence at the site of 3700 New Horizons Way Vacaville, CA 95688 and to develop foundation design recommendations for the project based on our evaluation of subsurface conditions. In addition, comments and recommendations related to foundation are provided in this report. Other geotechnical aspects of the project design, including lateral earth pressures and backfill requirements, are also discussed.

The subject site is located at 3700 New Horizons Way Vacaville, CA 95688, with coordinates of 38°23'16.1"N, 121°56'29.3"W.

The vicinity map of the project is illustrated in Exhibit III.

The Site Location in Topographic Map and Landslide Map have also been presented in Exhibit III of the report showing the subject site to be located on Flat land (Low Susceptibility Zone).

1-2- Geologic Setting and Faults

1-2-1 Regional Geology

The project site is located in the Great Valley geometric province of California, which lies between the Coast Ranges and Sierra Nevada provinces. The Great Valley province is underlain by an alluvial plain approximately 50 miles wide and 400 miles long, which is drained by the Sacramento and San Joaquin rivers (USGS, 2003). This region is typically underlain by sedimentary and metasedimentary alluvium which was formed by erosion of the two mountain ranges during the Mesozoic and Cenozoic eras.

Mesozoic rocks include marine Cretaceous sandstone and shale, as well as metamorphosed clastic and volcanic rocks of the Franciscan assemblage. The Cenozoic rocks consist of strata of continental and marine origin, and Pliocene-Pleistocene volcanic rocks (City of Vacaville, 1998).

The western portion of Solano County is dominated by mountains and valleys while the southern and eastern portions are dominated by flat broad valleys, marshes, sloughs, and low-lying hills. These low lands are associated with the Sacramento River Alluvial Fan (Solano County, 2008).

Geologic subunits in Solano County include Quaternary surficial deposits, early Pleistocene and older rocks, and the Franciscan Complex. The following geological unit is present at the site:
Q oal:Alluvium (late and early Pleistocene)-Sand, silt, clay, and gravel deposits with little or none of the original geomorphic expression preserved. Moderately to extremely dissected, in places tens or hundreds of feet above the current depositional surface, and capped by well-developed soils. In Yolo County, this unit includes the Red Bluff Formation.

Certain types of soils have characteristics that make them more susceptible to geotechnical hazards, such as erosion and expansion. Soils subject to expansion increase when water is added and shrink when water dries out. The Solano County Safety Element map classifies most of Solano County as having soils with a high shrink-swell potential, which would indicate that expansive soils could be present. The primary soil types in the Vacaville area are silty, sandy, and clay loams, with a smaller portion being made up of purely clay soils. Though not all types of clay are expansive, soils with a clay component are more prone to expansion. Approximately 64 percent of Vacaville's soils contain at least some clay component.

1-2-2- Faults

Fault activity map of California (CGS, 2010) shows that there are two faults around the site location (Exhibit III). Among the two faults of Vaca and Midland, nearest one to the site location is Vaca fault with a distance of 3.33 miles (Exhibit III).

The project site is located on the east of Vaca Fault (0.33 miles) and southwest of Midland Fault (7.03 miles).

The Vaca-Kirby Hills Fault system is the only fault system that passes through the Vacaville Planning Area. The Vaca Fault has not experienced displacement within the past 11,700 years, and there is no evidence for displacement along the Kirby Hills Fault during the last 700,000 years. The Green Valley Fault system, which lies 12 miles to the southwest of Vacaville, has been active within the past 200 years. While more likely than either of the two previous faults to have seismic impacts on Vacaville, the United States Geological Survey (USGS), a federal science organization that examines natural resources, natural hazards, and our environment, estimates the probability of a magnitude 6.7 or greater earthquake along this fault prior to 2036 o be only 3 percent. The Rogers Creek Fault, part of the Hayward Fault System, lies roughly 24 miles to the southwest of Vacaville and has an estimated 16 percent probability of producing a magnitude 6.7 or greater earthquake prior to 2036.

Upper Cretaceous and Paleogene sedimentation in the southern Sacramento Basin has resulted in the formation of a north-south trending growth fault system, the Midland Fault System, along the eastern

flank of the depositional basin. The Midland Fault is the dominant growth fault of this syndepositional fault system. Three major growth faults branch off toward the northwest from the Midland Fault in the northern portion of the system.

Tectonic activity along the Midland Fault System occurred in three phases: 1) Late Cretaceous, 2) middle Paleocene, and 3) late Paleocene through Eocene. Syndepositional fault movement is documented by an abrupt basinward increase in stratigraphic thickness across the fault system, a rollover of beds into the faults, and a counter-regional thickening of strata on the downthrown side of the faults. Average vertical throw of the Upper Cretaceous and Paleogene strata increases with depth, demonstrating progressive growth fault movement through time. Movement along the fault system probably ceased during Oligocene time, as the faults do not appear to offset Oligocene sediments within the Markley submarine canyon.

2- Project Investigation

A subsurface exploration program consisting of 3 test borings were conducted on 19 February 2019 under the supervision of AEC.

2-1- Field Investigation and Exploratory Boreholes

The test borings were drilled to a maximum depth of 36.5 ft. below the ground surface. Borings were advanced using 6” diameter hollow stem auger.

Table 1 shows the specifications of the boreholes; the boreholes location is shown in Exhibit III. Boreholes logs are also presented in Exhibit I of the report.

Table 1 - Specifications of the borehole

Borehole Name	Depth (ft.)	Diameter (inch)
B1	36.5	6
B2	21.5	6
B3	21.5	6

2-1-1- Ground Water Table

According to the boreholes logs, water table has been encountered in different depths at B1 to B3 as presented in Table 2.

Table 2 – Ground water level in the boreholes

Borehole Name	Ground Water Level (ft.)
B1	16
B2	13
B3	14

2-1-2- Standard Penetration Test (SPT) (ASTM: D1586)

Soil samples were typically recovered continuously at 1-2 ft. intervals by driving a standard split-spoon sampler ((1-3/8 in). I.D., (2 in.) O.D., a distance of 18 inches or 24 inches into the undisturbed soil under the impact of a 140 lb. hammer free-falling 30 inches. The number of blows required to advance the sampler through each 6 in. interval was recorded. The "N" value is taken as the number of blows required to advance the sampler the last 12 in. of the 18-in. sampling range. When the split-spoon sampler was advanced over 24-in. range, the "N" value is the number of blows required to drive the sampler the middle 12 in. making use of the energy corrected SPT blow count, denoted as N_{65} where 65 is the percentage of the theoretical free-fall hammer energy. Variations of SPT versus depth, in different boreholes, are presented in Figure 1 and Table 3.

Table 3- The value of SPT versus depth in different boreholes

	Depth (ft.)	$N_{spt,65}$
B1	2	27
	5	47
	10	27
	15	> 50
	20	42
	25	> 50
	30	41
	35	35
B2	2	16
	5	26
	10	27
	15	32
	20	70
B3	2	18
	5	33
	10	31
	15	40
	20	47

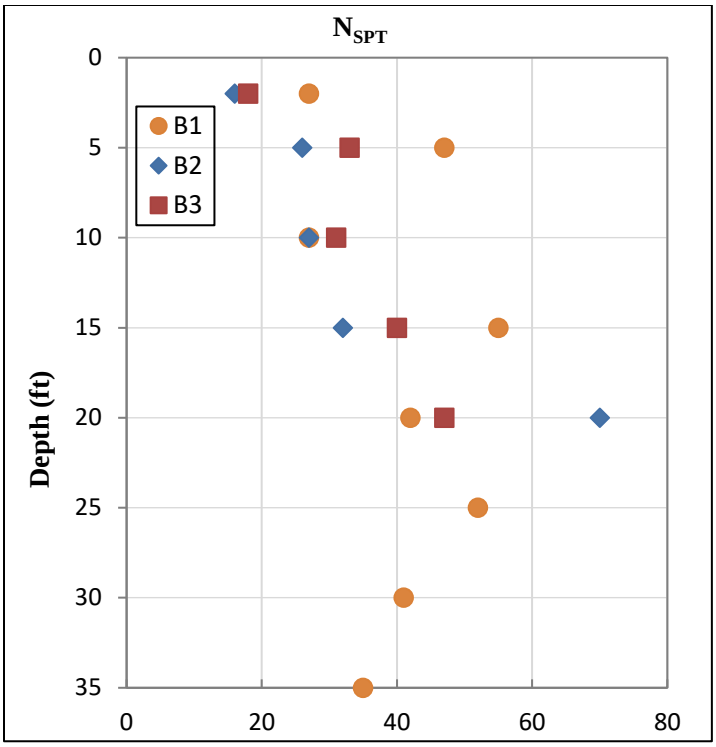

Figure 1 - Variation of SPT versus depth in different boreholes

According to SPT test results, SPT values are mostly above 16 for the alluvial part of the ground, which is due to the existence of very firm clay.

According to the Table 4 (see US Army Corps of Engineers, ENGINEER MANUAL ENGINEERING AND DESIGN, Geotechnical Investigations), the descriptive strength of fine grained part of the soil may be classified as "very firm" condition, per SPT correlation.

Table 4- Strength of fine grained soils (US Army Corps of Engineers Manual)

Descriptive Term	Blows[1] per Foot[2]	Unconfined Compressive Strength kPa	Unconfined Compressive Strength (tsf)	Field Test
Very soft	< 2	<25	(< 0.25)	Core (height twice diameter) sags under its own weight while standing on end; squeezes between fingers when fist is closed
Soft	2-4	25-50	(0.25-0.5)	Easily molded by fingers
Medium	4-8	50-100	(0.5-1.0)	Molded by strong pressure of fingers
Firm	8-15	100-190	(1.0-2.0)	Imprinted very slightly by finger pressure
Very firm	15-30	190-380	(2.0-4.0)	Cannot be imprinted with finger pressure; can be penetrated with a pencil
Hard	> 30	> 380	(> 4.0)	Imprinted only slightly by pencil point

2-2- Laboratory Test Results

A laboratory soil testing program was performed to determine classification and for correlation of engineering properties. Laboratory tests were performed on selected samples of the soils. Testing consisted of geotechnical index tests including water content determinations and grain size distributions. The results of these tests have been used to estimate the main parameters required for designing of the foundation, such as internal friction angle and cohesion. The details of Lab tests are presented in Exhibit II.

2-2-1- Grain Size Analysis

Particle size analysis ASTM (D421-85(02)), (D422-63(02))

Atterberg limits (AASHTO T89 and T90 – ASTM D4318)

The particle size analysis is conducted on the selected soil samples in accordance with the abovementioned standards.

According to particle distribution results, soil classification is determined in compliance with the Unified Soil Classification System (USCS) (ASTM D2487 and ASTM D2488) and is recorded on the borehole logs. Grain size distribution tests results are presented in table 5. According to grain size distribution tests results, alluvial part of the site is categorized mainly as low plasticity clay with PI between 8 and 29, thus expansive soils may be present at the subject site.

Table 5- Grain size distribution tests results

Borehole No.	Sample Depth (ft.)	Graining (%)			Atterberg limits		Classification (USCS)
		Gravel	Sand	Clay and Silt	LL %	PI %	
B1	2	0.8	25.1	74.1	34.1	19.3	CL
B1	10 – 11.5	0.0	2.9	97.1	48.8	22.8	CL
B1	20	0.2	7.7	92.1	40.4	13.1	CL
B1	30	0.0	23.5	76.5	43.4	23.9	CL
B2	2	1.0	20.9	78.1	48.2	28.8	CL
B2	5	0.0	51.6	48.4	26.5	8.2	CL-ML
B3	2	0.0	23.4	76.6	41.5	24.6	CL
B3	5	0.3	40.2	59.5	38.1	20.9	CL

2-2-2- Natural Moisture Content and Density Test

Natural moisture content ASTM (D2216-98)
The natural moisture content of soil samples are measured for the selected samples, the value of each is indicated in borehole logs.

Density Tests (ASTM D7263)
Density of the selected soil samples has been determined per ASTM D7263.
Water content and dry density tests results of the soil samples are summarized in Table 6.

Table 6- Water content and dry unit weight

Borehole No.	Sample Depth (ft.)	Height of Sample	Dry Density (pcf)	W (%)
B1	2	5.75”	112.8	17.5
B1	5 – 6.5	6”	115.8	13.3
B1	10 – 11.5	6”	85.1	39.2
B1	15	5.38”	80	41.1
B1	20	5.88”	90.2	32.6
B1	25 – 26.5	6”	102.8	26.5
B1	30	5.88”	99.1	26.6
B1	35	5.38”	106.3	22.1
B2	2 – 3.5	5.13”	123.8	21
B2	5	5.63”	119.9	15
B3	2	5.88”	107.1	20
B3	5	5.25”	100	19

2-2-3- Direct shear test ASTM

Direct shear test ASTM (D3080-04)
The direct shear test is conducted on disturbed or undisturbed samples under a vertical stress in order to determine the mechanical characteristics of soil (internal friction angle and cohesion).

The tests performed on selected soil samples were under unconsolidated and undrained condition (UU) and the test results have been presented in Exhibit II.

3- Description of Soil Layers

3-1- General Description of the Subsurface Soil Layers

Based on the visual observations during the drilling, in-situ test results and laboratory testings, the encountered soil is generally classified as:

- Low plasticity clay (CL), though at some locations fat clay may be present.

In boreholes B1, B2 and B3, the layers down to 5 ft. are generally moist, very stiff, light brown lean clay with sand followed by moist, hard, light brown lean clay to 36.5 ft. depth.

3-2- Geotechnical Parameters

The SPT has been used to correlate engineering parameters such as density and strength (Table 4), angle of internal friction and cohesion (Table 7) and the stress-strain modulus Es as shown in Table 8.

Table 7- Typical values of soil friction angle for different soils according to USCS

Description	USCS	Soil friction angle [°]		Reference
		min	max	
Inorganic clays, silty clays, sandy clays of low plasticity	CL	27	35	[1]
Silty clay	OL, CL, OH, CH	18	32	[2]
Clay	CL, CH, OH, OL	18	28	[2]

1. Swiss Standard SN 670 010b, Characteristic Coefficients of soils, Association of Swiss Road and Traffic Engineers
2. Minnesota Department of Transportation, Pavement Design, 2007

Table 8- Equations for stress-strain modulus E_s by several test methods (Bowles, 2002)

E_s in kPa for SPT and units of q_c for CPT; divide kPa by 50 to obtain ksf.

Soil	SPT	CPT
Sand (normally consolidated)	$E_s = 500(N + 15)$ $= 7000\sqrt{N}$ $= 6000N$ — — — ‡$E_s = (15\,000 \text{ to } 22\,000) \cdot \ln N$	$E_s = (2 \text{ to } 4)q_u$ $= 8000\sqrt{q_c}$ — — — $E_s = 1.2(3D_r^2 + 2)q_c$ *$E_s = (1 + D_r^2)q_c$
Sand (saturated)	$E_s = 250(N + 15)$	$E_s = Fq_c$ $e = 1.0 \quad F = 3.5$ $e = 0.6 \quad F = 7.0$
Sands, all (norm. consol.)	¶$E_s = (2600 \text{ to } 2900)N$	
Sand (overconsolidated)	†$E_s = 40\,000 + 1050N$ $E_{s(OCR)} \approx E_{s,nc}\sqrt{OCR}$	$E_s = (6 \text{ to } 30)q_c$
Gravelly sand	$E_s = 1200(N + 6)$ $= 600(N + 6) \quad N \le 15$ $= 600(N + 6) + 2000 \quad N > 15$	
Clayey sand	$E_s = 320(N + 15)$	$E_s = (3 \text{ to } 6)q_c$
Silts, sandy silt, or clayey silt	$E_s = 300(N + 6)$	$E_s = (1 \text{ to } 2)q_c$
	If $q_c < 2500$ kPa use $\quad$ $E_s' = 2.5q_c$ $2500 < q_c < 5000$ use $\quad$ $E_s' = 4q_c + 5000$ where E_s' = constrained modulus $= \dfrac{E_s(1-\mu)}{(1+\mu)(1-2\mu)} = \dfrac{1}{m_v}$	
Soft clay or clayey silt		$E_s = (3 \text{ to } 8)q_c$

Final values of geotechnical parameters for the subject site using the field observations, in-situ and laboratory tests (direct shear tests) are summarized in Table 7.

Table 7- Geotechnical Parameters Estimates

Material	γ_{wet} (pcf)	γ_{sat} (pcf)	c (ksf)	φ (degrees)	E_s (ksf)	ν	K_0	K_a	K_p
CL	125	130	0.8	25	630	0.4	0.58	0.41	2.46

γ_{wet} : wet unit weight in the field.

γ_{sat} : saturated unit weight.

c : cohesion.

φ : angle of internal friction

E_s : elasticity modulus

ν : Poisson ratio

K_0 : at rest earth pressure

K_a , K_p: active and passive earth pressure

4- Foundation Design Recommendations

Recommendations presented herein are based on the proposed building layout and site development plan as understood at this time. However, at the time of preparation of this report, structural column loads were not available. As further information is developed by the architect and/or structural engineer concerning these items, the design criteria should be reviewed by AEC for continued applicability. As a general recommendation, foundation and below-grade elements of the building should be designed in accordance with the building code selected for design. The following sections provide specific geotechnical design recommendations for the foundation and below-grade structure.

The proposed project is a 4-story hotel (per drawings prepared by Iyer and Associates Architects, dated 2019). We have assumed that the foundation bearing level will be approximately as the ground floor level after removing the top soil. The foundation bearing soils at this depth are typically lean clay. However, high LL in the samples tested implies existence of expansive soils is possible and this needs to be confirmed during the foundation excavation.

It is necessary to build up the subgrade to achieve the proposed footing subgrade level, for this it is recommended that compacted structural fill be used. The compacted structural fill should be graded in accordance with the recommendations in Section 7.2.1.

4-1- Recommended Foundation

Based on the loading conditions assumed by us and subsurface conditions as observed in the field investigations, it is our opinion that direct soil bearing foundations such as reinforced concrete **strip foundation** will likely provide the most technically-feasible and cost-effective foundation system for the proposed structure.

Please note that expansive soil may be present at the site. This should be ruled out during the construction of the foundation. If existence of expansive clay is reconfirmed, more stringent controlling methods such as substituting expansive soil with engineered fill, importing low volume engineered fill or lime treatment will be recommended.

4-2- Allowable Bearing Capacity

As noted above, the foundation bearing soils at the site consist of very firm clay. The recommended maximum allowable gross bearing pressure for design of **strip footing** in these soils in undisturbed condition is **6.2 ksf** for **4.0 ft. width**. This bearing pressure value applies to the total dead load plus permanently and/or frequently applied live loads including the weight of the foundation elements. This bearing pressure may however, be increased by one-third when considering transient loads such as earthquake forces.

The least lateral dimension of continuous footings should be 24 in. For footings with least lateral dimension less than 24 in., allowable bearing pressure in ksf should be one-third of the recommended allowable bearing pressure multiplied by the least lateral dimension in feet. Exterior footings and

footings in unheated areas should bear a minimum of 24 in. below the adjacent ground surface for frost protection. In heated interior areas, footings should bear a minimum of 12 in. below the top of the adjacent floor slab. The bottom of footings should be established below a 2 horizontal to 1 vertical (2H:1V) slope line drawn upward and outward from the bottom of any adjacent utility or structure.

The outputs of foundation bearing capacity are presented in Exhibit V and for choosing different widths, this graph can be consulted.

4-3- Total Settlement

Settlement considerations, rather than bearing capacity, generally control spread footing or reinforced concrete mat foundation selection and design at these depths in these soils. It is our opinion that for the maximum allowable bearing pressure recommended above, soil bearing foundations should experience a maximum post-construction settlement of approximately 1 in. We anticipate that the majority of the settlements will occur during or soon after construction with the largest settlements occurring at the center of the structure. As noted above, the anticipated bearing pressure is more than the existing pressure of the overburden soils at the proposed bearing elevation so settlement will control foundation selection.

4-4- Differential Settlement

Differential settlements are generally caused by variations in soil profile (including layer thickness), compressibility characteristics, applied load, bearing pressures, foundation dimension, and foundation stiffness. At this time it is expected that the differential settlement should be on the order of ½ inch between adjacent columns. However once the column loads are calculated, this value should be re-evaluated.

4-5- Modulus of Subgrade Reaction

If a reinforced concrete strip is selected as the preferred option, the structural design of reinforced concrete strip foundations typically requires a modulus of subgrade reaction (Winkler spring) or a similar elastic analysis method to determine thickness and reinforcing requirements for the **strip** foundation. We recommend that a modulus of subgrade reaction (k_s) of **224 kips per cubic foot (kcf)** be used. The recommended modulus value provided is for a 1-ft-square plate and must be corrected for mat size. The formula presented below may be used to calculate the appropriate modulus for mat foundations supported by granular soils:

$$k_b = k_s\left(\frac{b+1}{2b}\right)^2$$

where:

k_b = Corrected modulus (kcf)
k_s = Modulus for 1-ft-square plate (kcf)
b = Foundation width (ft.)

4-6- Ground Floor Slabs

It is recommended that the ground floor slabs of buildings and structures be designed as soil-supported slabs-on-grade, bearing on a minimum 6-inch thick layer of crushed stone that is graded in accordance with the recommendations in Section 7.2. We also recommend that a 10 mil-thick polyethylene vapor barrier be placed on top of the aggregate layer to reduce moisture condensation on the underside of the slab-on-grade.

4-7- Lateral Resistance

Shallow foundations bearing on a reinforced subgrade or on compacted structural fill may be designed to resist lateral forces using a friction coefficient of 0.4 along the bottom of the foundations and a passive resistance of 320 pounds per square foot per foot (pcf) of depth on the vertical sides of the foundations. This value does not include a safety factor; a safety factor of 1.5 should be used against sliding in the design. The frictional and passive pressure components of lateral resistance may be combined, provided that passive resistance does not exceed two-thirds of the total. The top 24-in of soil should be neglected when calculating passive lateral earth pressures unless the area around the foundation is covered with pavement.

Basement walls, if any, will be subjected to lateral earth pressures. A soil saturated unit weight and coefficient of active lateral earth pressure (k_a) of 130 pcf and 0.41, respectively, should be utilized for design of basement walls.

Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses.

4-8- Foundation Drainage

As previously discussed, and as shown on the test boring logs, groundwater was encountered in explorations. Besides, during periods of significant precipitation, or during the spring thaw, there is a possibility that water could become trapped on the outside face of the foundation walls, where buildings have below grade spaces. With no way to relieve the pressure head from the accumulated water, the water could exert excess pressure on the walls and leak into the finished below grade spaces. In these cases, and in areas where there are no below grade structures but the final exterior grade will be above than the entry-level floor slab, a perimeter foundation drain is recommended.

To drain such water, it is recommended that a perimeter wall drain be provided along the outside of the foundation wall. The foundation perimeter drain should consist of a 0.1 m (4-inch) diameter perforated pipe surrounded by 0.15 m (6 inches) of crushed stone, graded in accordance with the recommendations in Section 7.2, placed inside a non-woven geotextile filter fabric to limit silting. The perimeter drain trench should be backfilled with compacted structural fill. Pipe invert elevations

should be kept below the bottom of the adjacent slab but above the footing bearing elevation. The perimeter drain should be pitched to drain by gravity to the site storm drain system.

5- Seismic Design Considerations

The details of USGS seismic design are presented in Exhibit IV.

6- Liquefaction Consideration

Liquefaction is a phenomenon in which loose, saturated, relatively cohesionless soil deposits lose shear strength during strong ground motions. Primary factors controlling liquefaction include intensity and duration of ground motion, gradation characteristics of the subsurface soils, in-situ stress conditions, and the depth to groundwater. Liquefaction is typified by a loss of shear strength in the liquefied layers due to rapid increases in pore water pressure generated by earthquake accelerations.

Liquefaction typically occurs in areas where the soils below the water table are composed of poorly consolidated, fine to medium-grained, primarily sandy soil. In addition to the requisite soil conditions, the ground acceleration and duration of the earthquake must also be of a sufficient level to induce liquefaction.

The project location on has not been evaluated by CGS for liquefaction hazard.

7- Construction Considerations

7-1- General

The primary purpose of this section of the report is to comment on items related to excavation, earthwork and related geotechnical aspects of the proposed foundation design. It is written primarily for the engineer having responsibility of preparation for the plans and specifications of the foundation, but it may also aid personnel who monitor the construction of the wall. Prospective contractors for this project must evaluate construction problems on the basis of their experience on similar projects, taking into account their own construction methods and procedures.

7-2- Fill Materials

7-2-1- Compacted Structural Fill

The structural fill should be a well-graded granular material. Caltrans AB Class II is recommended to be used for this purpose with the following specifications.

Table 8- CALTRANS AB Class II recommended parameters

Material	γ_d (pcf)	γ_{sat} (pcf)	c (ksf)	φ (degrees)
CALTRANS AB CLASS II (92% compacted)	125	130	0.1	38

Minimum 5 feet of the compacted backfill behind the wall is required for wall of 10' tall, shorter wall can have narrower backfill zone.

Imported structural fill should be used if the on-site excavated soils cannot meet the gradation requirements indicated above.

In addition to the above requirements, structural fill to be placed in the upper 3 ft. of filled areas during periods of wet and/or freezing weather should contain less than 5 percent passing the No. 200 sieve. Material proposed as structural fill should be tested and approved by a qualified geotechnical engineer prior to its use.

To evaluate the suitability and the quality of the fill source, we recommend that the laboratory testing of fill material be performed in accordance with the ASTM Test Methods indicated below.

Table 9- Summary of ASTM Test Methods

Summary of ASTM Test Methods	
Test	ASTM Designation
Moisture Content	D 2216
Modified Proctor	D 1557
Sieve Analysis	D 422
Atterberg Limits	D 4318

Structural fill in unconfined areas should be placed in horizontal lifts not exceeding 9-in. in loose thickness and compacted to at least 95 percent of the laboratory maximum dry density, as determined by ASTM Test D 1557 (Modified Proctor). Structural fill should be moisture conditioned to within ±2 percentage points of the optimum moisture content.

Structural fill should be compacted by self-propelled vibratory rollers or other approved compaction equipment. Where compaction occurs in confined areas, the loose lift thickness should be reduced to a maximum of 6 in. and compaction performed by hand-guided vibratory compactors or tampers.

Before placing fill materials, the exposed natural soil should be observed and proof rolled to identify any soft compressible layers. At the end of each day's operations, the last lift should be rolled by a smooth-wheel roller to eliminate ridges of un-compacted soil to aid runoff and drainage. No layer of fill should be placed until the underlying materials have been approved.

7-2-2- Common Fill

Common (non-structural) fill should consist of sandy or gravelly soil with a maximum particle size of 3 inches, with less than 35 percent passing the No. 200 sieve, and with a plasticity index of 20 or less.

7-3- Quality Control

Placement and compaction of all fill materials should be monitored and tested by a qualified technician under supervision of a professional geotechnical engineer. We recommend that all structural fill placements be tested in accordance with ASTM D2922 and D3017 (Nuclear Density Method) to verify the density, degree of compaction, and moisture content of the fill. The specifications should call for frequent testing on each lift. In the event where any portion of the fill fails to meet the compaction requirements, the area should be reworked, re-compacted, and retested until the specified compaction is achieved.

8- Summary of Design recommendation

The site soil parameters need to be chosen from Table 7.

In case of confirming existence of expansive soil, the treatment would be performed by mechanical or chemical techniques against swelling.

The in-fill soil back of the wall in contact with geogrid in general needs to be in compliance of section 7.2.

All the design methods and parameters including factor of safeties need to be followed per requirements of the engineer designing the structure of wall. All the construction details are required to be per direction of the engineer designing the structure of wall.

Drainage for the foundation is required per detail and specs of footings.

All the deviations from this report needs to be brought to the attention of AEC as will be discussed in section 9.

Section 7.3 of this report and all the special inspection requirements mentioned in the report are required to be performed by AEC and needs to be identified on the cover sheet of the wall design construction documents before being submitted to the authority having jurisdiction. The plans are required to be reviewed by AEC and be verified to be in compliance with the requirements of this report before being submitted to jurisdiction having authority.

9- Limitations

This Report was prepared pursuant to an Agreement dated December 10, 2018 between Sharyar Ibrahim, the representative of 3S WA OP, LLC and AEC. All uses of this Report are subject to, and deemed acceptance of, the conditions and restrictions contained in the Agreement. The observations and conclusions described in this Report are based solely on the Scope of Services provided pursuant to the Agreement. AEC has not performed any additional observations, investigations, studies or other testing not specified in the Agreement and the Report. AEC shall not be liable for the existence of any condition the discovery of which would have required the performance of services not authorized under the Agreement.

This Report is prepared for the exclusive use Sharyar Ibrahim, the representative of 3S WA OP, LLC in connection with the design and construction of the mentioned development. There are no intended beneficiaries other than Sharyar Ibrahim, the representative of 3S WA OP, LLC, AEC shall owe no duty, whatsoever, to any other person or entity on account of the Agreement or the Report. Use of this Report by any person or entity other than Sharyar Ibrahim, the representative of 3S WA OP, LLC for any purpose whatsoever is expressly forbidden unless such other person or entity obtains written authorization from Sharyar Ibrahim, the representative of 3S WA OP, LLC and from AEC. Use of this Report by such other person or entity without the written authorization of Sharyar Ibrahim, the representative of 3S WA OP, LLC and AEC shall be at such other person's or entities sole risk, and shall be without legal exposure or liability to AEC.

Use of this Report by any person or entity, including by Sharyar Ibrahim, the representative of 3S WA OP, LLC, for a purpose other than for the design and construction of the proposed development is expressly prohibited unless such person or entity obtains written authorization from AEC indicating that the Report is adequate for such other use. Use of this Report by any person or entity for such other purpose without written authorization by AEC shall be at such person's or entities sole risk and shall be without legal exposure or liability to AEC.

This report reflects site conditions observed and described by records available to AEC as of the date of report preparation. The passage of time may result in significant changes in site conditions, technology, or economic conditions which could alter the findings and/or recommendations of the report. Accordingly, Sharyar Ibrahim, the representative of 3S WA OP, LLC and any other party to whom the report is provided recognize and agree that AEC shall bear no liability for deviations from observed conditions or available records after the time of report preparation.

Use of this Report by any person or entity in violation of the restrictions expressed in this Report shall be deemed and accepted by the user as conclusive evidence that such use and the reliance placed on this Report, or any portions thereof, is unreasonable, and that the user accepts full and exclusive responsibility and liability for any losses, damages or other liability which may result.

10- References

1- *7.5' Series Geologic Map, T. W. Dibblee and J.A. Minch, 2005.*
2- *7.5' Series Topographic Map, USGS.*
3- *ASTM test methods.*
4- *Department of the U.S. army corps of engineers Washington, DC 20314-1000, Engineering and design geotechnical investigations, Manual No. 1110-1-1804.*
5- *Fault activity map of California, CGS, 2010.*
6- *Foundation analysis and design, Joseph E. Bowles, McGraw-Hill, fifth edition.*
7- *Liquefaction map, USGS.*
8- *Landslide map, USGS.*
9- *Minnesota Department of Transportation, Pavement Design, 2007.*
10- *Swiss Standard SN 670 010b, Characteristic Coefficients of soils, Association of Swiss Road and Traffic Engineers.*
11- *The Midland Fault System, Southern Sacramento Basin, California, Miles W. Pepper, Dane S. Johnson.*
12- *Geologic Map and Map Database of Northeastern San Francisco Bay Region, California Most of Solano County and Parts of Napa, Marin, Contra Costa, San Joaquin, Sacramento, Yolo, and Sonoma Counties By R.W. Graymer, D.L. Jones, and E.E. Brabb*
13- *City of Vacaville, Vacaville General Plan, Safety Element.*

Exhibit I

Boring Logs

EXPLORATORY BORING LOG				Project No : 3711						Borehole No. : 1					
Address: 3700 New Horizons Way, Vacaville, CA 95688				Test Date : 2/19/2019						Logged By : S.B					
DRILL COMPANY: Exploration Geo Drilling				BORING DIA.: 6"						BORING ELEV.: ---					
LOACATION OF BOREHOLE : Specified on Plan				SAMPLER: SPT C2 :cal. 2" SPT C2.5 :cal. 2.5"						Weather: Sunny					
Notes:	USCS SOIL TYPE	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	N-SPT	POCKET PEN. (tsf)	DRY DENSITY (pcf)	MOIST. CONT. (%)	FINES (%)	SANDS (%)	GRAVELS (%)	LIQUID LIMIT	PLASTICITY INDEX		
Description:															
Top soil Sandy Clay		1													
Brown to reddish brown Lean Clay with Sand (CL) - Very Stiff - Moist		2	C2.5	14 18 23	27	2	112.8	17.5	74.1	25.1	0.8	34.1	19.3		
		3													
		4													
Brown to reddish brown - Hard - Moist		5	C2.5	24 30 42	47	>4.5	115.8	13.3							
		6													
		7													
		8													
		9													
Light brown Lean Clay (CL) - Very Stiff Moist		10	C2.5	14 18 23	27		85.1	39.2	97.1	2.9	0.0	48.8	22.8		
		11													
		12													
		13													
		14													
Light brown - Hard - Wet		15	C2.5	22 34 50	55	1.8	79.6	41.1							
		16													
		17													
		18													
		19													
Light brown Lean Clay (CL) - Hard Moist		20	C2.5	14 23 41	42	>4.5	90.2	32.6	92.2	7.69	0.16	40.4	13.1		
		21													
		22													
		23													
		24													
Light brown to yellow - Hard - Moist		25	C2.5	23 36 44	52	4.3	102.8	26.5							
		26													

FORM#: S-10 REV.2 DATE PREPARED: 10/20/2014 DATE REVISED: 11/25/2014

EXPLORATORY BORING LOG				Project No : 3711						Borehole No. : 1					
Address: 3700 New Horizons Way, Vacaville, CA 95688				Test Date : 2/19/2019						Logged By : S.B					
DRILL COMPANY: Exploration Geo Drilling				BORING DIA.: 6"						BORING ELEV.: ---					
LOACATION OF BOREHOLE : Specified on Plan				SAMPLER: SPT C2 :cal. 2" SPT C2.5 :cal. 2.5"						Weather: Sunny					
Notes:	USCS SOIL TYPE	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	N-SPT	POCKET PEN. (tsf)	DRY DENSITY (pcf)	MOIST. CONT. (%)	FINES (%)	SANDS (%)	GRAVELS (%)	LIQUID LIMIT	PLASTICITY INDEX		
Description:															
Light brown Lean Clay with Sand (CL) Moist - Hard		30	C2.5	17 25 38	41	>4.5	99.1	26.6	76.5	23.5	0.0	43.4	23.9		
Light brown - Moist - Hard		35	C2.5	15 26 30	35	3.0	106.3	22.1							
Terminated at 36.5' - Underground water encountered at 16 ft															

FORM#: S-10 REV.2 DATE PREPARED: 10/20/2014 DATE REVISED: 11/25/2014

EXPLORATORY BORING LOG				Project No : 3711						Borehole No. : 2					
Address: 3700 New Horizons Way, Vacaville, CA 95688				Test Date : 2/19/2019						Logged By : S.B					
DRILL COMPANY: Exploration Geo Drilling				BORING DIA.: 6"						BORING ELEV.: ---					
LOACATION OF BOREHOLE : Specified on Plan				SAMPLER: SPT C2 :cal. 2" SPT C2.5 :cal. 2.5"						Weather: Sunny					

Description:	USCS SOIL TYPE	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	N-SPT	POCKET PEN. (tsf)	DRY DENSITY (pcf)	MOIST. CONT. (%)	FINES (%)	SANDS (%)	GRAVELS (%)	LIQUID LIMIT	PLASTICITY INDEX
Top soil Sandy Clay		1											
Brown Lean Clay with Sand (CL) Very Stiff - Moist		2	C2.5	7 10 15	16	1.5	123.8	21.5	78.1	20.9	1.0	48.2	28.8
		3											
		4											
Light brown Clayey Sand (SC) - Dense Moist		5	C2.5	9 16 24	26	>4.5	119.9	14.9	48.4	51.6	0.0	26.5	8.16
		6											
		7											
		8											
		9											
Very Stiff		10	C2.5	10 17 24	27								
		11											
		12											
		13											
		14											
Hard		15	C2.5	12 18 31	32								
		16											
		17											
		18											
		19											
Hard		20	C2.5	13 63 45	70								
		21											
Terminated at 21.5' - Underground water encountered at 13 ft		22											
		23											
		24											
		25											
		26											

EXPLORATORY BORING LOG				Project No : 3711						Borehole No. : 3					
Address: 3700 New Horizons Way, Vacaville, CA 95688				Test Date : 2/19/2019						Logged By : S.B					
DRILL COMPANY: Exploration Geo Drilling				BORING DIA.: 6"						BORING ELEV.: ---					
LOACATION OF BOREHOLE : Specified on Plan				SAMPLER: SPT C2 :cal. 2" SPT C2.5 :cal. 2.5"						Weather: Sunny					

Description:	USCS SOIL TYPE	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	N-SPT	POCKET PEN. (tsf)	DRY DENSITY (pcf)	MOIST. CONT. (%)	FINES (%)	SANDS (%)	GRAVELS (%)	LIQUID LIMIT	PLASTICITY INDEX
Top soil Sandy Clay		1											
Light brown Lean Clay with Sand (CL) Very Stiff - Moist		2	C2.5	6 9 18	18	3.5	107.1	20.3	76.6	23.4	0.0	41.5	24.6
		3											
		4											
Light brown Sandy Lean Clay (CL) Hard - Moist		5	C2.5	18 24 26	33	>4.5	100.0	19.5	59.5	40.2	0.3	38.1	20.9
		6											
		7											
		8											
		9											
Very Stiff		10	C2.5	13 19 29	31								
		11											
		12											
		13											
		14											
Hard		15	C2.5	16 22 39	40								
		16											
		17											
		18											
		19											
Hard		20	C2.5	22 31 42	47								
		21											
Terminated at 21.5' - Underground water encountered at 14 ft		22											
		23											
		24											
		25											
		26											

Exhibit II

Lab Results

ACHIEVEMENT ENGINEERING CORP.

Moisture Density
(AASHTO T265 - ASTM D2216)

Report Date:	2/25/2019
Project No:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Technician:	S.B.

Type of Material:	Soil	Sample Description:	
Source:	Field		
Sampled by:	N.H	Sample Date:	2/19/2019

Sample No:	B1 2'	B1 5'-6.5'	B1 10'-11.5'	B1 15'	B1 20'	B1 25'-26.5'	B1-30'
Ht. of Sample:	5.75	6.00	6.00	5.38	5.88	6.00	5.88
Tare No:	H-15	NH-3	NH-1	AE-21	H-18	AE-22	NH-2
Gross Wet Wt:	1014.12	1042.25	952.95	829.07	943.93	1032.50	984.17
Gross Dry Wt:	882.11	934.51	720.15	624.28	742.84	842.40	804.17
Tare Wt:	128.13	126.39	126.18	126.09	126.07	125.26	126.71
Net Dry Wt:	753.98	808.12	593.97	498.19	616.77	717.14	677.46
Wt. of Water:	132.01	107.74	232.80	204.79	201.09	190.10	180.00
% Moisture	17.51%	13.33%	39.19%	41.11%	32.60%	26.51%	26.57%
Liners Dia	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"
Density Factors	0.860	0.860	0.860	0.860	0.860	0.860	0.860
Dry Density	112.77	115.83	85.14	79.64	90.21	102.79	99.08

Tested By: S.B. Reviewed E P.S

Signature: Signature:

2455 Autumnvale Drive, Unit E | San Jose, CA 95131| Tel: (408) 217-9174 | Fax: (408) 217-9632
www.achieveng.com

ACHIEVEMENT ENGINEERING CORP.

Moisture Density
(AASHTO T265 - ASTM D2216)

Report Date:	2/25/2019
Project No:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Technician:	S.B.

Type of Material:	Soil	Sample Description:	
Source:	Field		
Sampled by:	N.H	Sample Date:	2/19/2019

Sample No:	B1 35'	B2 2'-3.5'	B2 - 5'	B3 - 2'	B3 - 5'		
Ht. of Sample:	5.38	5.13	5.63	5.88	5.25		
Tare No:	H-35	H-20	H-8	H-38	H-31		
Gross Wet Wt:	938.58	1024.22	1030.18	1009.91	857.22		
Gross Dry Wt:	791.70	865.59	913.53	860.92	738.41		
Tare Wt:	127.04	127.40	128.94	128.52	127.94		
Net Dry Wt:	664.66	738.19	784.59	732.40	610.47		
Wt. of Water:	146.88	158.63	116.65	148.99	118.81		
% Moisture	22.10%	21%	15%	20%	19%		
Liners Dia	2.5"	2.5"	2.5"	2.5"	2.5"		
Density Factors	0.860	0.860	0.860	0.860	0.860		
Dry Density	106.25	123.75	119.85	107.12	100.00		

Tested By: S.B. Reviewed E P.S

Signature: Signature:

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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/24/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B1 - 2'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	1.85	0.83%	99.17%	
0	2.36mm	#8	0.92	0.41%	98.76%	
0	1.18mm	#16	0.61	0.27%	98.48%	
0	600µm	#30	1.11	0.50%	97.99%	
0	300µm	#50	5.37	2.41%	95.58%	
0	150µm	#100	18.1	8.12%	87.46%	
0	75µm	#200	29.87	13.39%	74.07%	

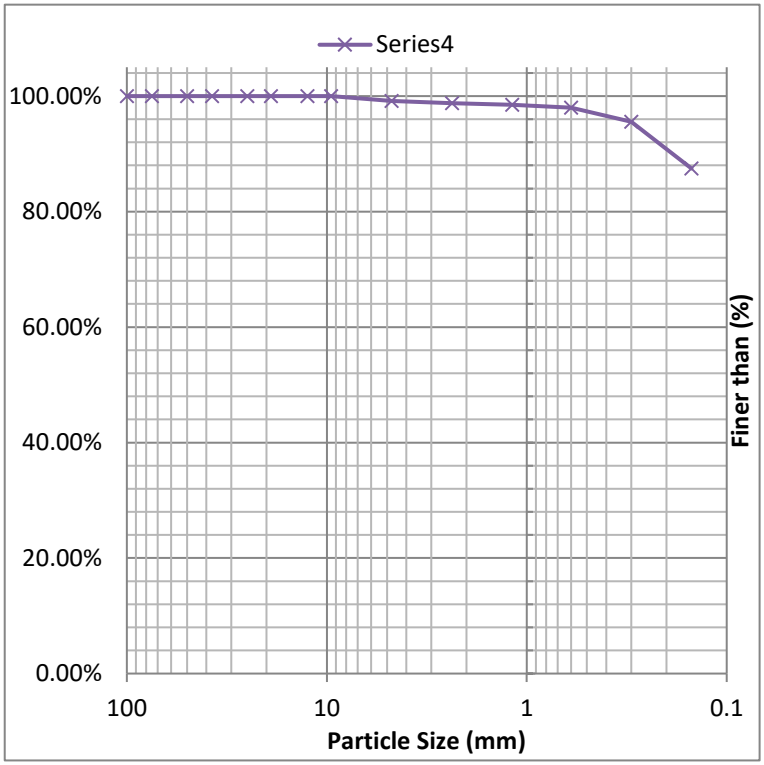
Pan #: AE-2
Pan weight (gr): 125.55
Mass of pan & dried sample before wash (gr): 348.56
Original mass before wash (gr): **223.01**
Min. readability of scale (gr) = 0.22
Mass of pan & dried sample after wash (gr): 183.55
Mass of sample after wash & being dried (gr): **58**
Mass after mechanical shake (gr): **57.83**

Percent of Gravel = **0.83%**
Fine Content = **74.07%**
Percent of Sand = **25.10%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0750**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.29%



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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/24/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B1 - 10'-11.5'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	0	0.00%	100.00%	
0	2.36mm	#8	0	0.00%	100.00%	
0	1.18mm	#16	0.35	0.16%	99.84%	
0	600µm	#30	0.6	0.28%	99.56%	
0	300µm	#50	1.43	0.66%	98.91%	
0	150µm	#100	1.68	0.77%	98.13%	
0	75µm	#200	2.25	1.03%	97.10%	

Pan #: AE-1
Pan weight (gr): 125.99

Mass of pan & dried sample before wash (gr): 343.49

Original mass before wash (gr): **217.5**

Min. readability of scale (gr) = 0.22

Mass of pan & dried sample after wash (gr): 132.31

Mass of sample after wash & being dried (gr): **6.32**

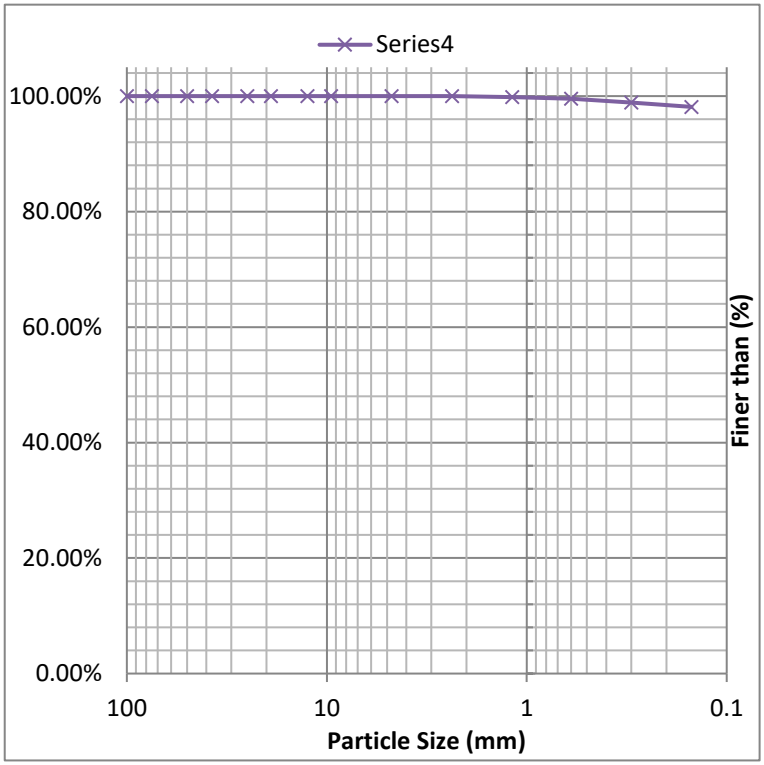
Mass after mechanical shake (gr): **6.31**

Percent of Gravel = **0.00%**
Fine Content = **97.10%**
Percent of Sand = **2.90%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0750**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.16%



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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/24/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B1 - 20'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	0.33	0.16%	99.84%	
0	2.36mm	#8	1.03	0.50%	99.34%	
0	1.18mm	#16	1.15	0.56%	98.78%	
0	600µm	#30	1.24	0.60%	98.18%	
0	300µm	#50	1.51	0.73%	97.44%	
0	150µm	#100	2.03	0.99%	96.46%	
0	75µm	#200	8.88	4.31%	92.15%	

Pan #: H-25
Pan weight (gr): 127.6

Mass of pan & dried sample before wash (gr): 333.47

Original mass before wash (gr): **205.87**

Min. readability of scale (gr) = 0.21

Mass of pan & dried sample after wash (gr): 143.78

Mass of sample after wash & being dried (gr): **16.18**

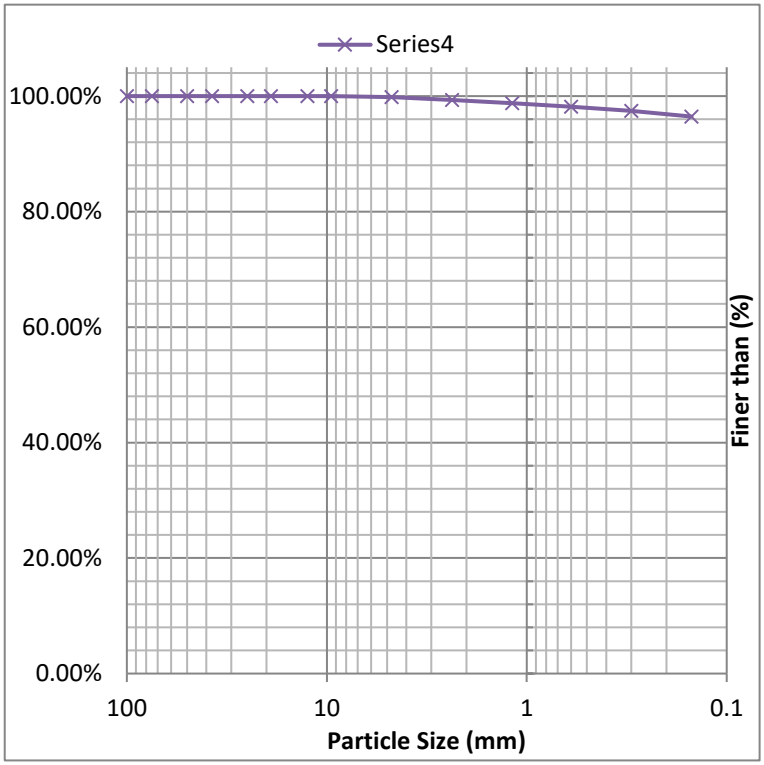
Mass after mechanical shake (gr): **16.17**

Percent of Gravel = **0.16%**
Fine Content = **92.15%**
Percent of Sand = **7.69%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0750**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.06%



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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/24/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B1 - 30'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	0	0.00%	100.00%	
0	2.36mm	#8	0	0.00%	100.00%	
0	1.18mm	#16	0	0.00%	100.00%	
0	600µm	#30	0.25	0.09%	99.91%	
0	300µm	#50	5.59	2.10%	97.81%	
0	150µm	#100	22.83	8.56%	89.25%	
0	75µm	#200	33.91	12.71%	76.54%	

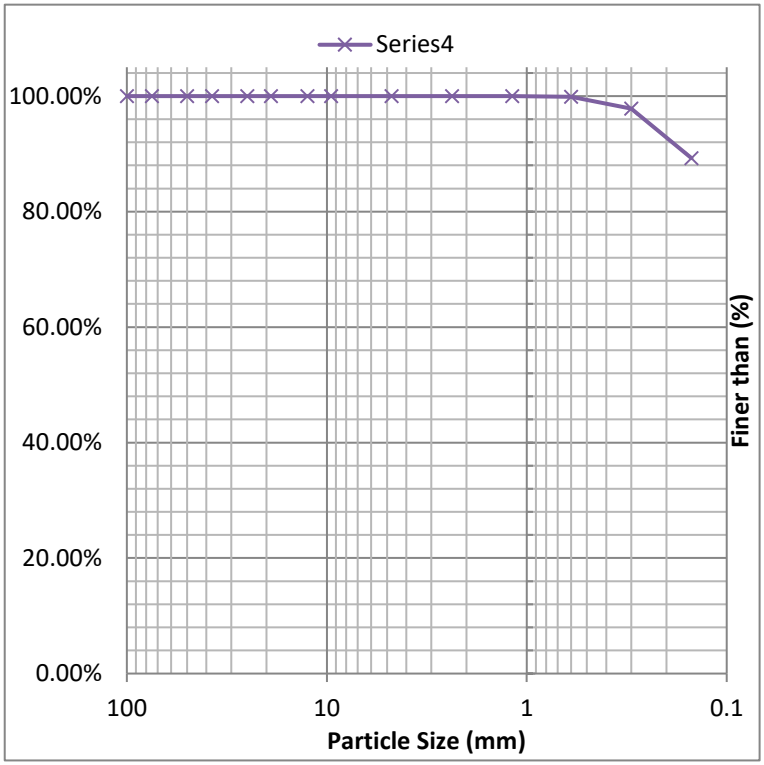
Pan #: H-12
Pan weight (gr): 128.98
Mass of pan & dried sample before wash (gr): 395.78
Original mass before wash (gr): **266.8**
Min. readability of scale (gr) = 0.27
Mass of pan & dried sample after wash (gr): 191.74
Mass of sample after wash & being dried (gr): **62.76**
Mass after mechanical shake (gr): **62.58**

Percent of Gravel = **0.00%**
Fine Content = **76.54%**
Percent of Sand = **23.46%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0750**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.29%



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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/25/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B2 - 2'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	2	0.97%	99.03%	
0	2.36mm	#8	0.87	0.42%	98.60%	
0	1.18mm	#16	0.9	0.44%	98.16%	
0	600µm	#30	1.25	0.61%	97.55%	
0	300µm	#50	7.07	3.44%	94.11%	
0	150µm	#100	15.21	7.41%	86.70%	
0	75µm	#200	17.66	8.60%	78.09%	

Pan #: H-11
Pan weight (gr): 127.43

Mass of pan & dried sample before wash (gr): 332.67

Original mass before wash (gr): **205.24**

Min. readability of scale (gr) = 0.21

Mass of pan & dried sample after wash (gr): 172.52

Mass of sample after wash & being dried (gr): **45.09**

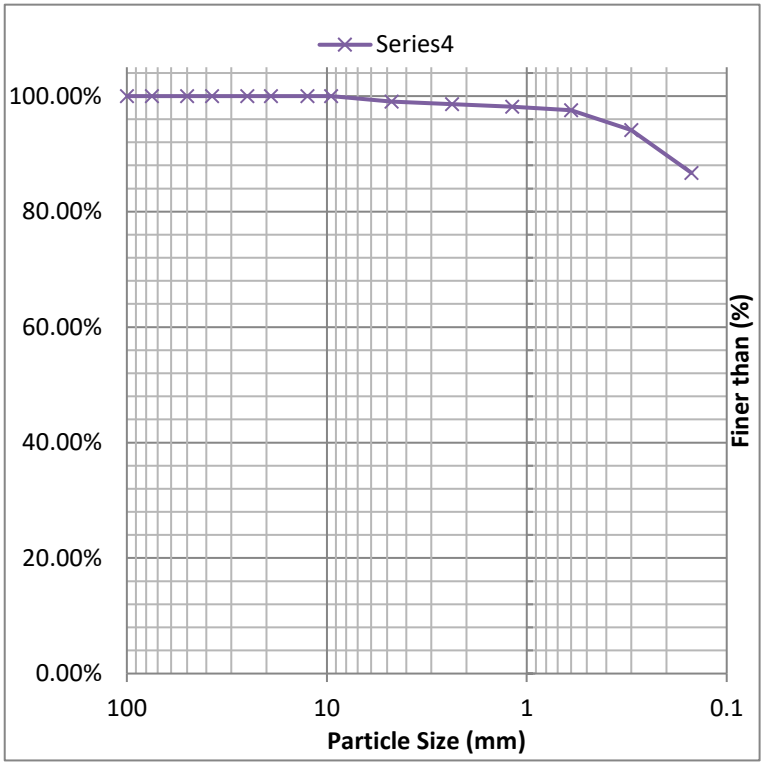
Mass after mechanical shake (gr): **44.96**

Percent of Gravel = **0.97%**
Fine Content = **78.09%**
Percent of Sand = **20.93%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0750**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.29%



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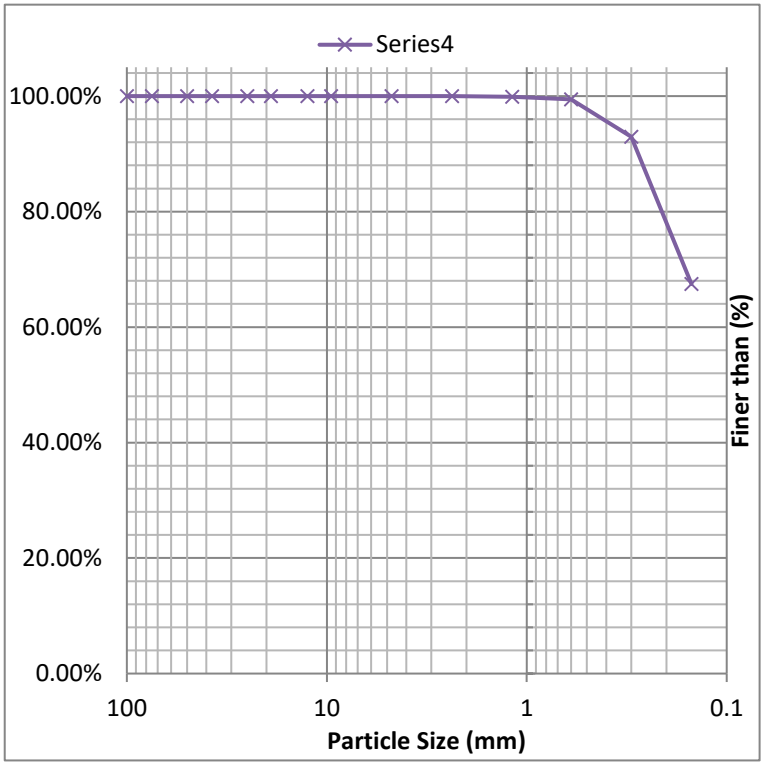
SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/25/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B2 - 5'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	0	0.00%	100.00%	
0	2.36mm	#8	0	0.00%	100.00%	
0	1.18mm	#16	0.25	0.12%	99.88%	
0	600µm	#30	0.92	0.43%	99.45%	
0	300µm	#50	13.72	6.48%	92.97%	
0	150µm	#100	54.03	25.52%	67.45%	
0	75µm	#200	40.4	19.08%	48.37%	



Pan #: H-13
Pan weight (gr): 129.52

Mass of pan & dried sample before wash (gr): 341.27

Original mass before wash (gr): **211.75**

Min. readability of scale (gr) = 0.21

Mass of pan & dried sample after wash (gr): 239.16

Mass of sample after wash & being dried (gr): **109.64**

Mass after mechanical shake (gr): **109.32**

Percent of Gravel = **0.00%**
Fine Content = **48.37%**
Percent of Sand = **51.63%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.1207**
D_{50} (mm)= **0.0814**

Cc= **1.6**
Cu= **0.6**

Check for waste limt (0.3%) : 0.29%

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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/25/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B3 - 2'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	0	0.00%	100.00%	
0	2.36mm	#8	0.2	0.09%	99.91%	
0	1.18mm	#16	0.52	0.24%	99.67%	
0	600µm	#30	1.74	0.81%	98.86%	
0	300µm	#50	6.76	3.14%	95.72%	
0	150µm	#100	18.5	8.59%	87.13%	
0	75µm	#200	22.65	10.51%	76.62%	

Pan #: H-39
Pan weight (gr): 127.62

Mass of pan & dried sample before wash (gr): 343.04

Original mass before wash (gr): **215.42**

Min. readability of scale (gr) = 0.22

Mass of pan & dried sample after wash (gr): 178.14

Mass of sample after wash & being dried (gr): **50.52**

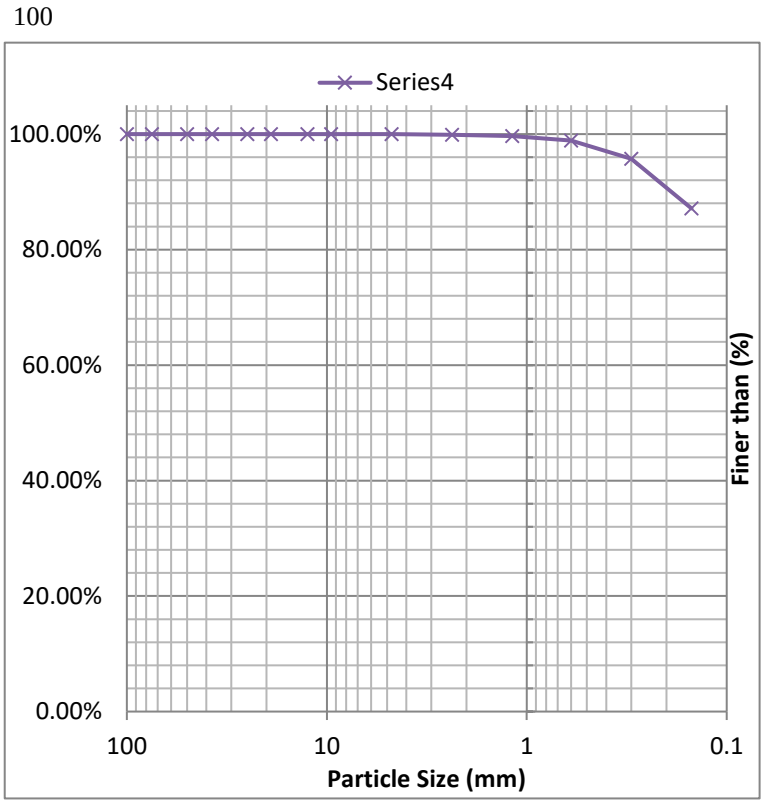
Mass after mechanical shake (gr): **50.37**

Percent of Gravel = **0.00%**
Fine Content = **76.62%**
Percent of Sand = **23.38%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0750**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.30%



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SIEVE ANALYSIS SHEET
(AASHTO T27-ASTM C136 and D6913)

Date:	2/25/2019
Project No.:	3711
Project Name:	H2S Prototype
Project Address:	Vacaville
Tested By:	S.B.
Material:	Soil

Borehole Number and Depth: **B3 - 5'**
Nominal Max. Size in sample = #4
Min. Test Sample size in kg [lb] = n/a
Nominal Dimension of seive = 8"

	Sieve Size	Sieve Size	Wt. Ret. (gr)	% Ret.	% Passing	Retained Limit (kg)
4	100mm	4"	0	0.00%	100.00%	
3	75mm	3"	0	0.00%	100.00%	
2	50mm	2"	0	0.00%	100.00%	
1	37.5mm	1 ½"	0	0.00%	100.00%	
1	25mm	1"	0	0.00%	100.00%	
1	19mm	¾"	0	0.00%	100.00%	
0	12.5mm	½"	0	0.00%	100.00%	
0	9.5mm	3/8"	0	0.00%	100.00%	
0	4.75mm	#4	0.5	0.25%	99.75%	
0	2.36mm	#8	0.51	0.25%	99.50%	
0	1.18mm	#16	1.45	0.71%	98.79%	
0	600µm	#30	6.65	3.26%	95.53%	
0	300µm	#50	25.34	12.44%	83.09%	
0	150µm	#100	25.85	12.69%	70.41%	
0	75µm	#200	22.19	10.89%	59.52%	

Pan #: H-1
Pan weight (gr): 125.29

Mass of pan & dried sample before wash (gr): 329.06

Original mass before wash (gr): **203.77**

Min. readability of scale (gr) = 0.20

Mass of pan & dried sample after wash (gr): 207.94

Mass of sample after wash & being dried (gr): **82.65**

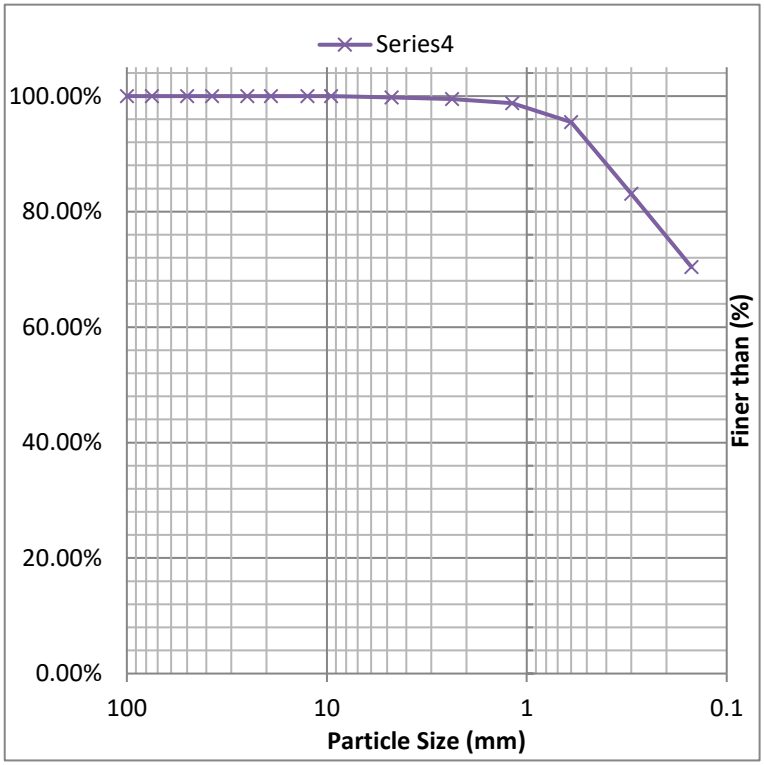
Mass after mechanical shake (gr): **82.49**

Percent of Gravel = **0.25%**
Fine Content = **59.52%**
Percent of Sand = **40.24%**

D_{10} (mm)= **0.0750**
D_{30} (mm)= **0.0750**
D_{60} (mm)= **0.0783**
D_{50} (mm)= **0.0750**

Cc= **1.0**
Cu= **1.0**

Check for waste limt (0.3%) : 0.19%



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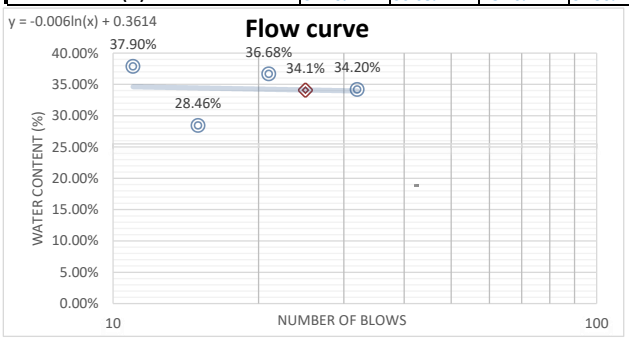
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	1	Project No:	3711
Sample ID:	021919-3711-B1-2	Project Name:	H2S Prototype
Sample Depth:	2'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

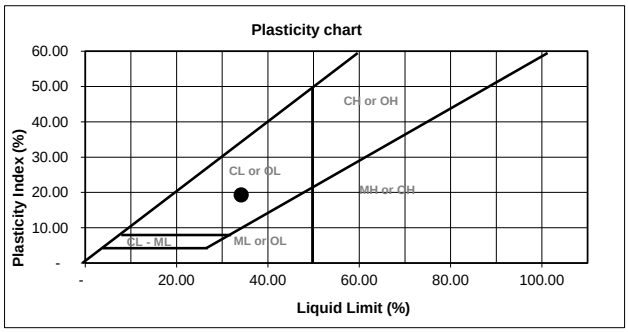
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	32	21	15	11			
Tare No.	AL-S	AD-1	LB-4	LB-2	AE-3	L-1	AC-3
Gross Wet Weight (gr)	32.97	36.81	43.64	40.96	7.58	7.24	6.55
Gross Dry Weight (gr)	27.45	29.94	36.46	32.82	7.13	6.88	6.27
Tare Weight (gr)	11.31	11.21	11.23	11.34	4.35	4.32	4.29
Net Dry Weight (gr)	**16.14**	**18.73**	**25.23**	**21.48**	**2.78**	**2.56**	**1.98**
Weight of Water (gr)	**5.52**	**6.87**	**7.18**	**8.14**	**0.45**	**0.36**	**0.28**
Water Content (%)	**34.20%**	**36.68%**	**28.46%**	**37.90%**	**16.19%**	**14.06%**	**14.14%**



Group Symbol CL

Shrinkage Limit Results

Liquid Limit %	34.11
Plastic Limit %	14.80
Plasticity Index	19.31
Shrinkage Limit %	
B – Value	
Toughness Index	



Tested By: S.B. Reviewed By: P.S.

Signature: _____ Signature: _____

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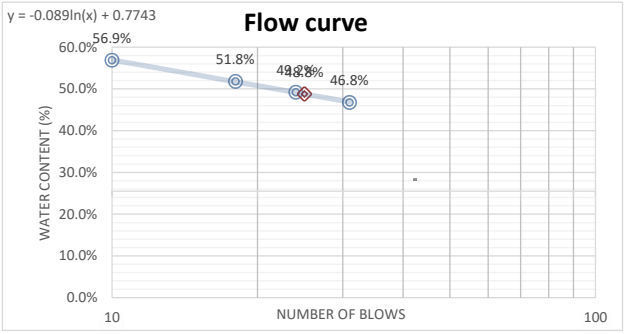
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	1	Project No:	3711
Sample ID:	021919-3711-B1-10 to 11.5	Project Name:	H2S Prototype
Sample Depth:	10' to 11.5'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

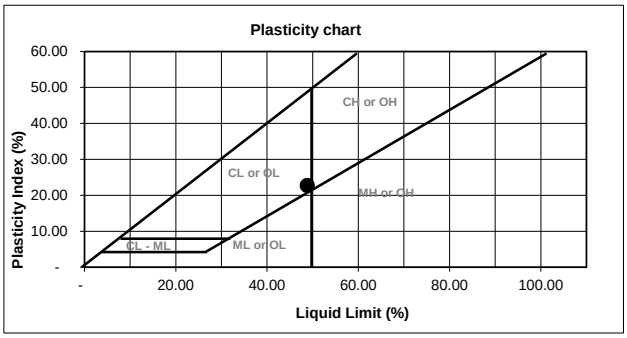
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	31	24	18	10			
Tare No.	AD-2	AC-3	LB-3	AB-4	AC-3	AB-1	AE-2
Gross Wet Weight (gr)	41.04	29.25	31.78	32.70	7.61	7.47	6.44
Gross Dry Weight (gr)	31.55	23.32	24.84	24.93	6.98	6.84	6.01
Tare Weight (gr)	11.26	11.27	11.44	11.27	4.43	4.44	4.42
Net Dry Weight (gr)	20.29	12.05	13.4	13.66	2.55	2.4	1.59
Weight of Water (gr)	9.49	5.93	6.94	7.77	0.63	0.63	0.43
Water Content (%)	46.8%	49.2%	51.8%	56.9%	24.71%	26.25%	27.04%



Group Symbol CL or OL

Shrinkage Limit Results

Liquid Limit %	48.78
Plastic Limit %	26.00
Plasticity Index	22.78
Shrinkage Limit %	
B – Value	
Toughness Index	



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Signature: _____ Signature: _____

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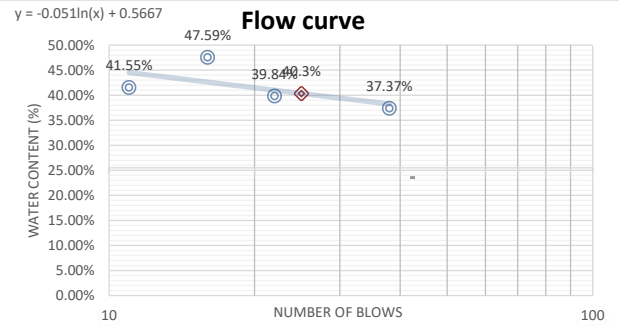
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	1	Project No:	3711
Sample ID:	021919-3711-B1-20	Project Name:	H2S Prototype
Sample Depth:	20'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

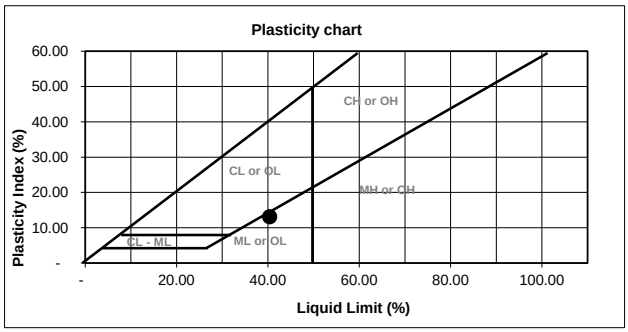
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	38	22	16	11			
Tare No.	AC-1	AL-1	AB-3	AL-2	L-3	L-2	AE-4
Gross Wet Weight (gr)	36.66	31.81	31.98	33.78	7.26	7.00	6.77
Gross Dry Weight (gr)	29.75	25.95	25.28	27.14	6.63	6.42	6.27
Tare Weight (gr)	11.26	11.24	11.20	11.16	4.33	4.36	4.36
Net Dry Weight (gr)	**18.49**	**14.71**	**14.08**	**15.98**	**2.3**	**2.06**	**1.91**
Weight of Water (gr)	**6.91**	**5.86**	**6.7**	**6.64**	**0.63**	**0.58**	**0.5**
Water Content (%)	**37.37%**	**39.84%**	**47.59%**	**41.55%**	**27.39%**	**28.16%**	**26.18%**



Group Symbol CL

Shrinkage Limit Results

Liquid Limit %	40.35
Plastic Limit %	27.24
Plasticity Index	13.11
Shrinkage Limit %	
B – Value	
Toughness Index	



Tested By: S.B. Reviewed By: P.S.

Signature: _____ Signature: _____

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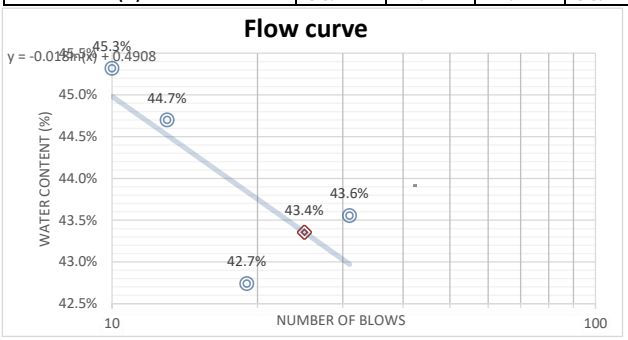
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	1	Project No:	3711
Sample ID:	021919-3711-B1-30	Project Name:	H2S Prototype
Sample Depth:	30'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

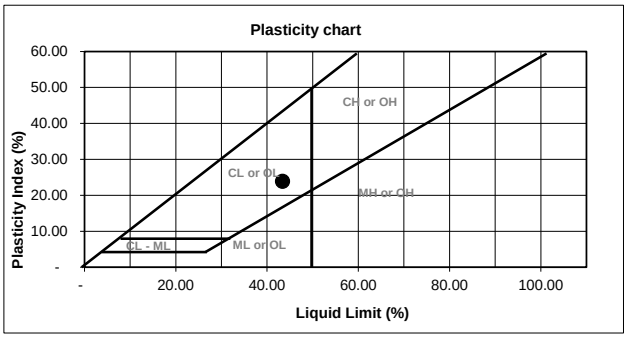
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	31	19	13	10			
Tare No.	AE-1	LB-1	LB-6	AE-2	AD-1	AE-7	AC-1
Gross Wet Weight (gr)	30.94	25.21	34.49	34.76	6.89	6.16	6.45
Gross Dry Weight (gr)	24.96	21.03	27.32	27.45	6.45	5.87	6.11
Tare Weight (gr)	11.23	11.25	11.28	11.32	4.25	4.42	4.25
Net Dry Weight (gr)	**13.73**	**9.78**	**16.04**	**16.13**	**2.2**	**1.45**	**1.86**
Weight of Water (gr)	**5.98**	**4.18**	**7.17**	**7.31**	**0.44**	**0.29**	**0.34**
Water Content (%)	**43.6%**	**42.7%**	**44.7%**	**45.3%**	**20.00%**	**20.00%**	**18.28%**



Group Symbol CL or OL

Shrinkage Limit Results

Liquid Limit %	43.35
Plastic Limit %	19.43
Plasticity Index	23.93
Shrinkage Limit %	
B – Value	
Toughness Index	



Tested By: S.B. Reviewed By: P.S.

Signature: _____ Signature: _____

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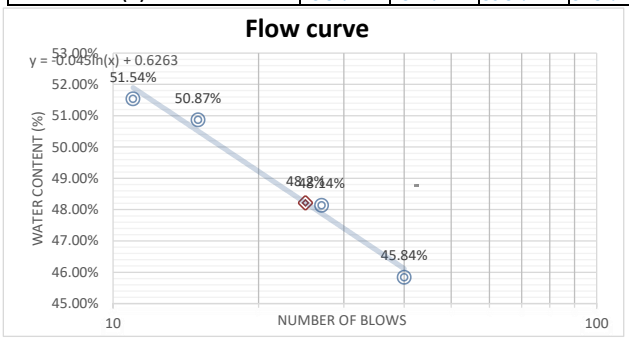
ACHIEVEMENT ENGINEERING CORP.

Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	2	Project No:	3711
Sample ID:	021919-3711-B2-2	Project Name:	H2S Prototype
Sample Depth:	2'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

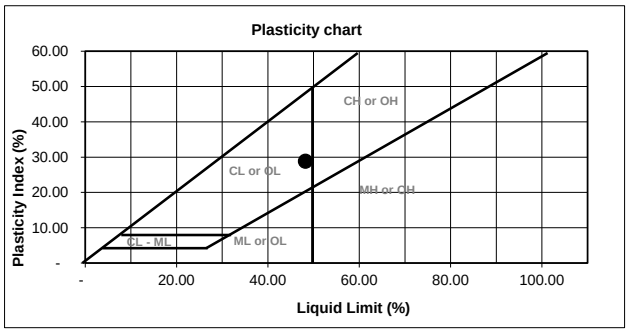
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	40	27	15	11			
Tare No.	LB-3	AE-2	AB-4	LB-4	AE-7	AC-1	AE-2
Gross Wet Weight (gr)	33.01	30.86	33.94	40.77	8.11	8.19	7.98
Gross Dry Weight (gr)	26.23	24.51	26.31	30.73	7.49	7.57	7.40
Tare Weight (gr)	11.44	11.32	11.31	11.25	4.45	4.26	4.35
Net Dry Weight (gr)	14.79	13.19	15	19.48	3.04	3.31	3.05
Weight of Water (gr)	6.78	6.35	7.63	10.04	0.62	0.62	0.58
Water Content (%)	45.84%	48.14%	50.87%	51.54%	20.39%	18.73%	19.02%



Group Symbol CL

Shrinkage Limit Results

Liquid Limit %	48.22
Plastic Limit %	19.38
Plasticity Index	28.84
Shrinkage Limit %	
B – Value	
Toughness Index	



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Signature: _____ Signature: _____

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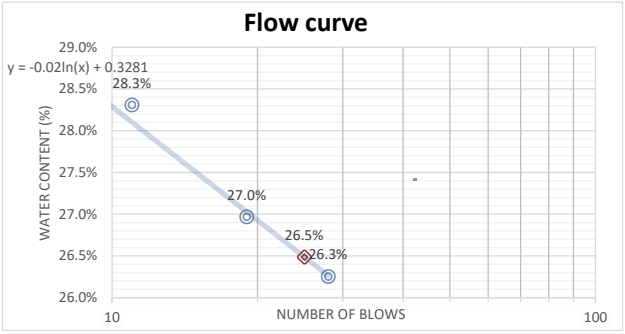
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	1	Project No:	3711
Sample ID:	021919-3711-B2-5	Project Name:	H2S Prototype
Sample Depth:	5'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

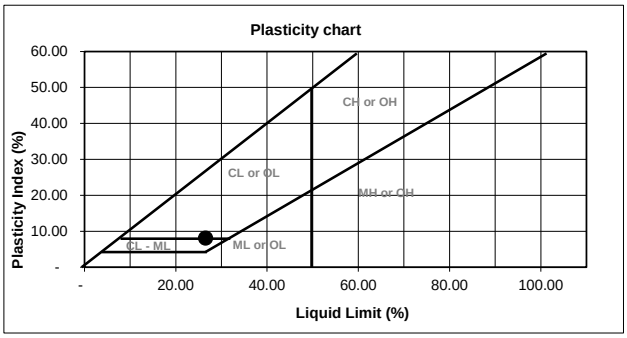
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	28	19	11	8			
Tare No.	AD-2	AE-1	LB-6	AC-3	AB-1	AC-3	AD-1
Gross Wet Weight (gr)	34.20	36.57	39.91	41.03	7.61	7.28	7.58
Gross Dry Weight (gr)	29.43	31.19	33.60	34.42	7.11	6.84	7.05
Tare Weight (gr)	11.26	11.24	11.31	11.30	4.36	4.35	4.28
Net Dry Weight (gr)	**18.17**	**19.95**	**22.29**	**23.12**	**2.75**	**2.49**	**2.77**
Weight of Water (gr)	**4.77**	**5.38**	**6.31**	**6.61**	**0.5**	**0.44**	**0.53**
Water Content (%)	**26.3%**	**27.0%**	**28.3%**	**28.6%**	**18.18%**	**17.67%**	**19.13%**



Group Symbol CL or OL

Shrinkage Limit Results

Liquid Limit %	26.49
Plastic Limit %	18.33
Plasticity Index	8.16
Shrinkage Limit %	
B – Value	
Toughness Index	



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Signature: _____ Signature: _____

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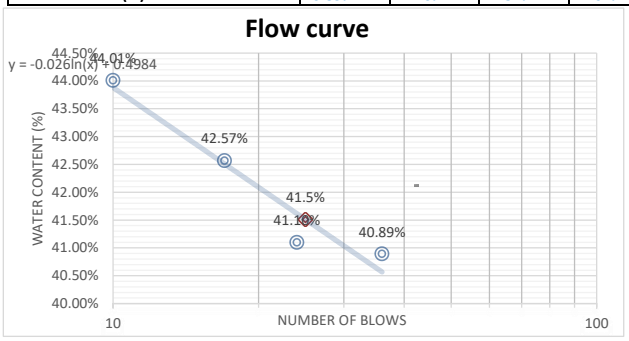
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	3	Project No:	3711
Sample ID:	021919-3711-B3-2	Project Name:	H2S Prototype
Sample Depth:	2'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

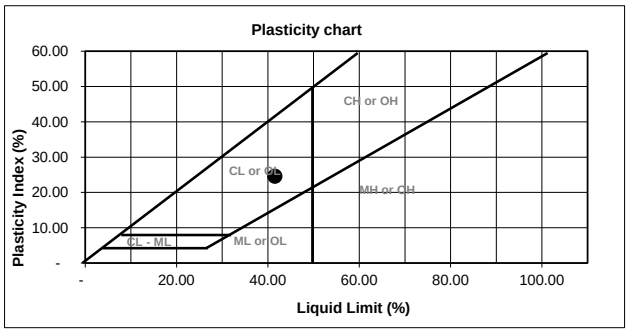
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	36	24	17	10			
Tare No.	AC-1	AL-1	AB-3	AL-2	AC-3	L-3	L-2
Gross Wet Weight (gr)	46.57	38.81	31.84	34.02	7.10	7.19	7.64
Gross Dry Weight (gr)	36.33	30.82	25.68	27.04	6.68	6.79	7.16
Tare Weight (gr)	11.29	11.38	11.21	11.18	4.26	4.32	4.36
Net Dry Weight (gr)	**25.04**	**19.44**	**14.47**	**15.86**	**2.42**	**2.47**	**2.8**
Weight of Water (gr)	**10.24**	**7.99**	**6.16**	**6.98**	**0.42**	**0.4**	**0.48**
Water Content (%)	**40.89%**	**41.10%**	**42.57%**	**44.01%**	**17.36%**	**16.19%**	**17.14%**



Group Symbol CL

Shrinkage Limit Results

Liquid Limit %	41.51
Plastic Limit %	16.90
Plasticity Index	24.61
Shrinkage Limit %	
B – Value	
Toughness Index	



Tested By: S.B. Reviewed By: P.S.

Signature: Signature:

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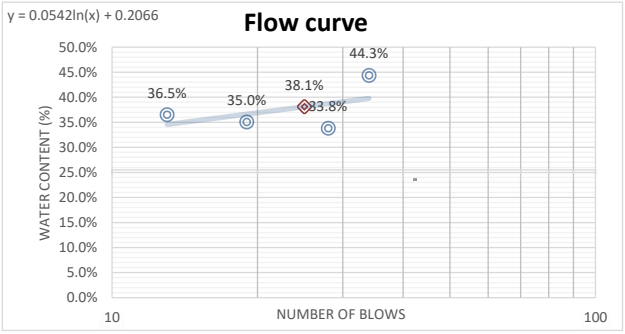
Atterberg Limits
(AASHTO T89 and T90 - ASTM D4318)

Sample Description:		Report Date:	2/24/2019
Boring No:	3	Project No:	3711
Sample ID:	021919-3711-B3-5	Project Name:	H2S Prototype
Sample Depth:	5'	Project Address:	Vacaville
Material:	Soil	Technician:	S.B.

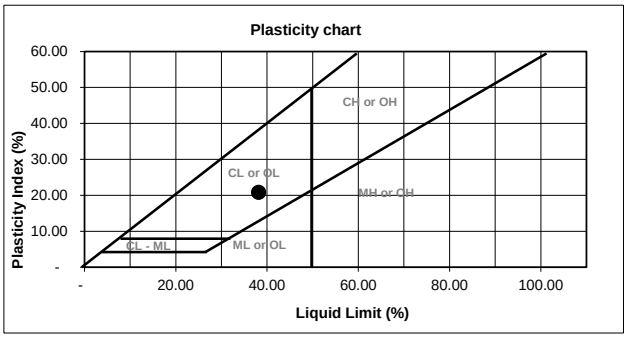
	Liquid Limit				Plastic Limit		
	1	2	3	4	1	2	3
No. of blows	34	28	19	13			
Tare No.	AD-1	LB-2	AL-3	LB-1	AE-4	L-1	AE-3
Gross Wet Weight (gr)	36.34	32.56	33.17	31.97	7.59	7.17	6.91
Gross Dry Weight (gr)	28.63	27.21	27.50	26.43	7.12	6.74	6.55
Tare Weight (gr)	11.24	11.38	11.32	11.26	4.35	4.39	4.37
Net Dry Weight (gr)	**17.39**	**15.83**	**16.18**	**15.17**	**2.77**	**2.35**	**2.18**
Weight of Water (gr)	**7.71**	**5.35**	**5.67**	**5.54**	**0.47**	**0.43**	**0.36**
Water Content (%)	**44.3%**	**33.8%**	**35.0%**	**36.5%**	**16.97%**	**18.30%**	**16.51%**



Group Symbol CL or OL

Shrinkage Limit Results

Liquid Limit %	38.11
Plastic Limit %	17.26
Plasticity Index	20.85
Shrinkage Limit %	
B – Value	
Toughness Index	



Tested By: S.B. Reviewed By: P.S.

Signature: _____ Signature: _____

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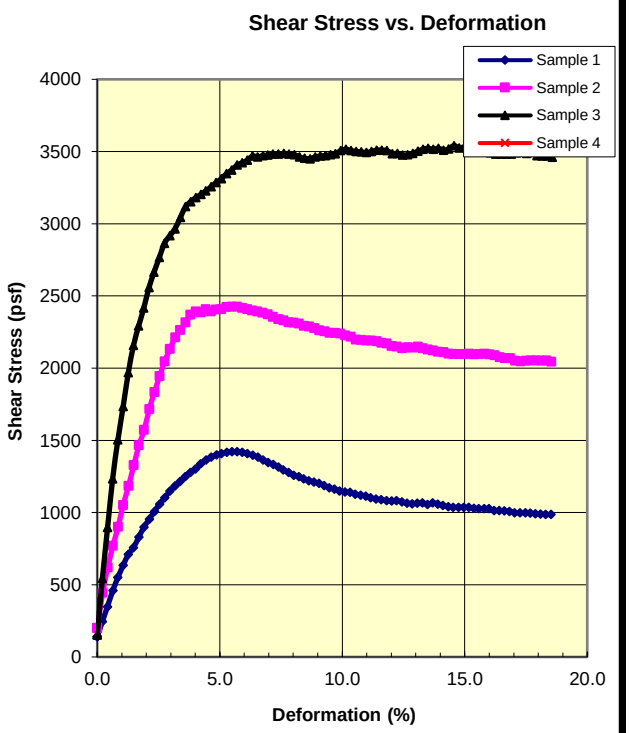
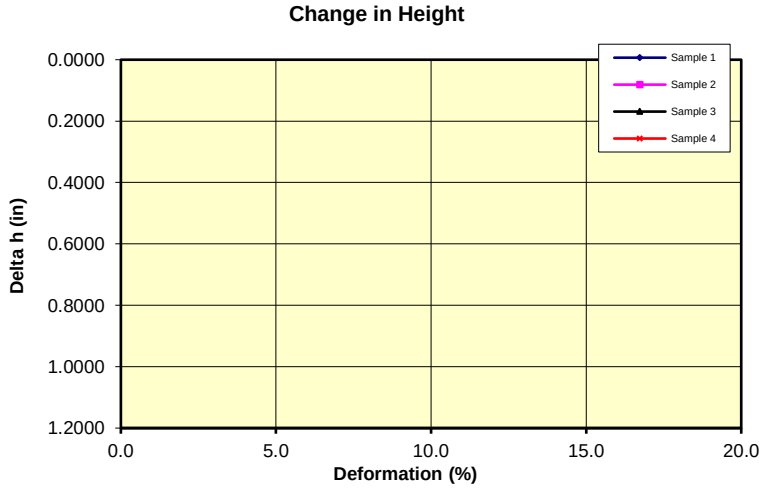
Consolidated Undrained Direct Shear (ASTM D3080M)

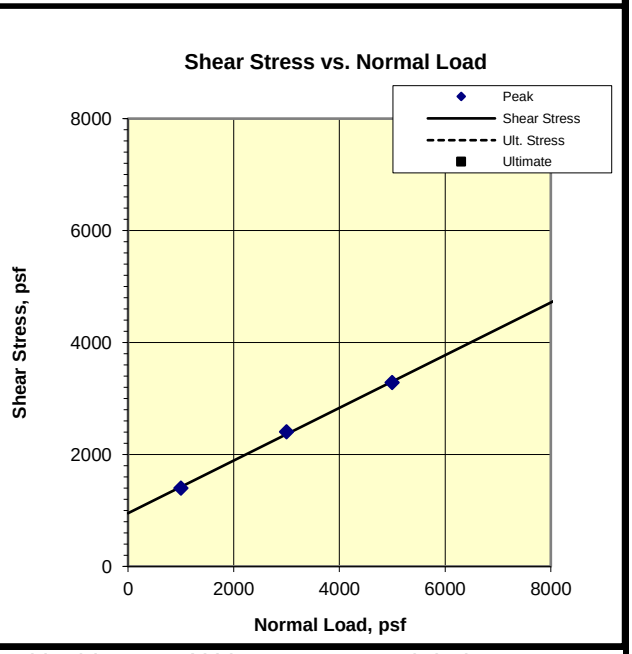
CTL Job #:	726-016	Project #:	3711	By:	MD
Client:	Achievement Engineering	Date:	3/4/2019	Checked:	PJ
Project Name:		Remolding Info:			

Specimen Data				
	1	2	3	4
Boring:	B2	B2	B2	
Sample:				
Depth (ft):	5-6.5	5-6.5	5-6.5	
Visual Description:	Olive Brown Clayey SAND	Olive Brown Clayey SAND	Olive Brown Clayey SAND	
Normal Load (psf)	1000	3000	5000	
Dry Mass of Specimen (g)	126.7	127.7	127.9	
Initial Height (in)	1.00	1.00	1.00	
Initial Diameter (in)	2.42	2.42	2.42	
Initial Void Ratio	0.606	0.593	0.591	
Initial Moisture (%)	18.8	16.4	17.5	
Initial Wet Density (pcf)	124.7	123.2	124.5	
Initial Dry Density (pcf)	105.0	105.8	105.9	
Initial Saturation (%)	83.9	74.7	79.9	
ΔHeight Consol (in)	0.0108	0.0386	0.0446	
At Test Void Ratio	0.588	0.532	0.520	
At Test Moisture (%)	20.7	18.9	19.1	
At Test Wet Density (pcf)	128.1	130.9	132.0	
At Test Dry Density (pcf)	106.1	110.0	110.9	
At Test Saturation (%)	95.1	96.1	99.0	
Strain Rate (%/min)	1.1	1.1	1.0	
Strengths Picked at	5%	5%	5%	
Shear Stress (psf)	1399	2404	3284	
ΔHeight (in) at 5%				
Ultimate Stress (psf)				

Phi (deg)	25.2	Ult. Phi (deg)	
Cohesion (psf)	950	Ult. Cohesion (psf)	







Remarks: *DS-CU* A fully undrained condition may not be attained in this test. ΔH is not measured during undrained direct shear tests.

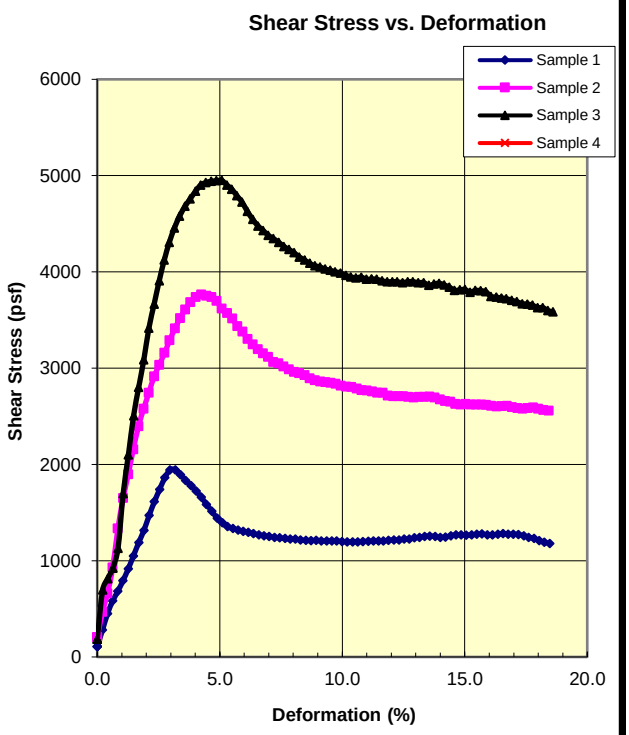
©

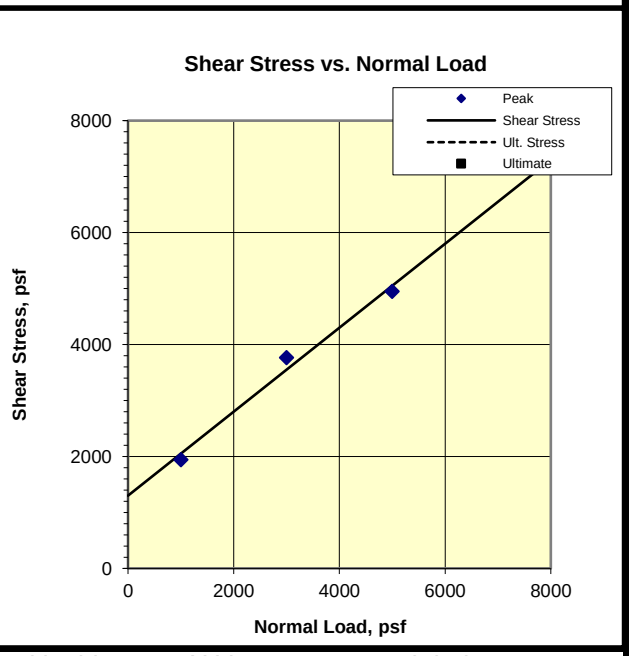
Consolidated Undrained Direct Shear (ASTM D3080M)

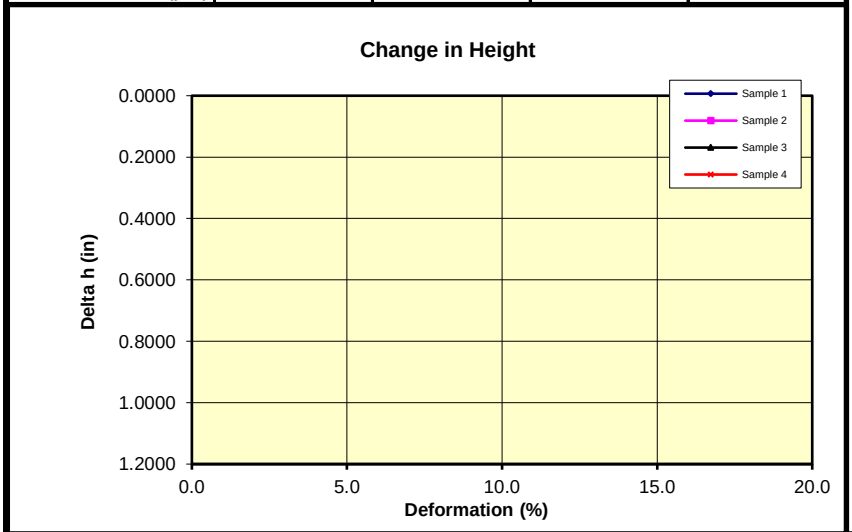
CTL Job #:	726-016	Project #:	3711	By:	MD
Client:	Achievement Engineering	Date:	3/4/2019	Checked:	PJ
Project Name:		Remolding Info:			

Specimen Data				
	1	2	3	4
Boring:	B3	B3	B3	
Sample:				
Depth (ft):	5-6.5	5-6.5	5-6.5	
Visual Description:	Yellowish Brown Clayey SAND	Yellowish Brown Clayey SAND	Yellowish Brown Clayey SAND	
Normal Load (psf)	1000	3000	5000	
Dry Mass of Specimen (g)	130.9	131.7	133.7	
Initial Height (in)	1.00	1.00	1.00	
Initial Diameter (in)	2.42	2.42	2.42	
Initial Void Ratio	0.555	0.546	0.523	
Initial Moisture (%)	17.2	16.8	17.0	
Initial Wet Density (pcf)	127.1	127.4	129.5	
Initial Dry Density (pcf)	108.4	109.0	110.7	
Initial Saturation (%)	83.8	83.2	87.9	
ΔHeight Consol (in)	0.0086	0.0261	0.0225	
At Test Void Ratio	0.542	0.505	0.488	
At Test Moisture (%)	19.2	18.5	18.0	
At Test Wet Density (pcf)	130.3	132.7	133.6	
At Test Dry Density (pcf)	109.3	112.0	113.2	
At Test Saturation (%)	95.8	98.8	99.5	
Strain Rate (%/min)	1.1	1.1	1.1	
Strengths Picked at	Peak	Peak	Peak	
Shear Stress (psf)	1944	3763	4950	
ΔHeight (in) at Peak				
Ultimate Stress (psf)				

Phi (deg)	36.9	Ult. Phi (deg)	
Cohesion (psf)	1300	Ult. Cohesion (psf)	





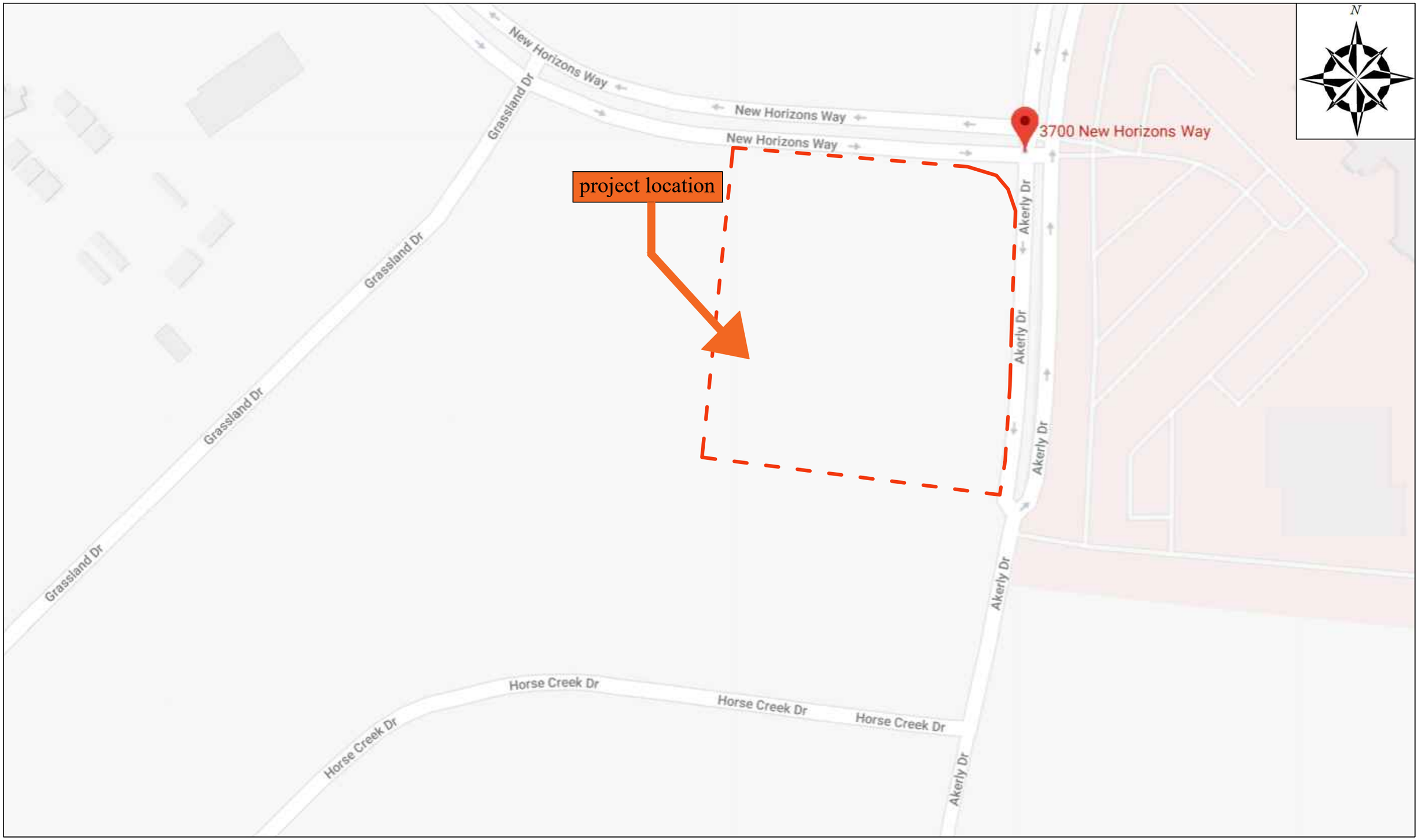


Remarks: *DS-CU* A fully undrained condition may not be attained in this test. ΔH is not measured during undrained direct shear tests.

©

Exhibit III

Maps



ACHIEVEMENT ENGINEERING CORP.

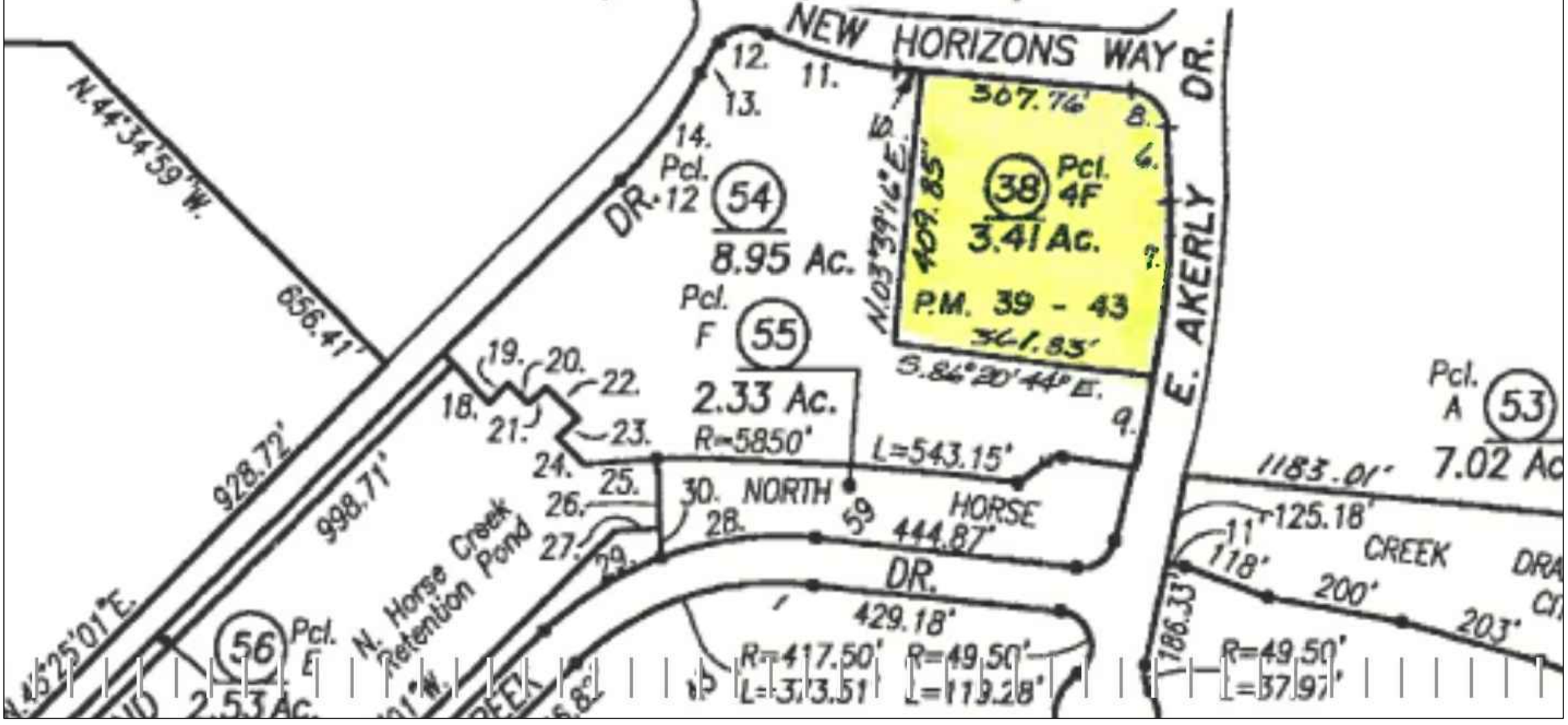
Project Number: 3711	Project Title: H2S Prototype
	Vicinity Map

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	_ _ /_ _ /_ _	...
2	_ _ /_ _ /_ _	...
3	_ _ /_ _ /_ _	...
4	_ _ /_ _ /_ _	

M 01

POR. LOT 37, RANCHO LOS PUTOS
POR. SEC. 2 & 11, T.6N., R.1W., M.D.B.& M. EXT.



ACHIEVEMENT ENGINEERING CORP.	Project Number: 3711	Project Title: H2S Prototype
	Parcel Map	

REVISIONS

	MM/DD/YY	REMARKS
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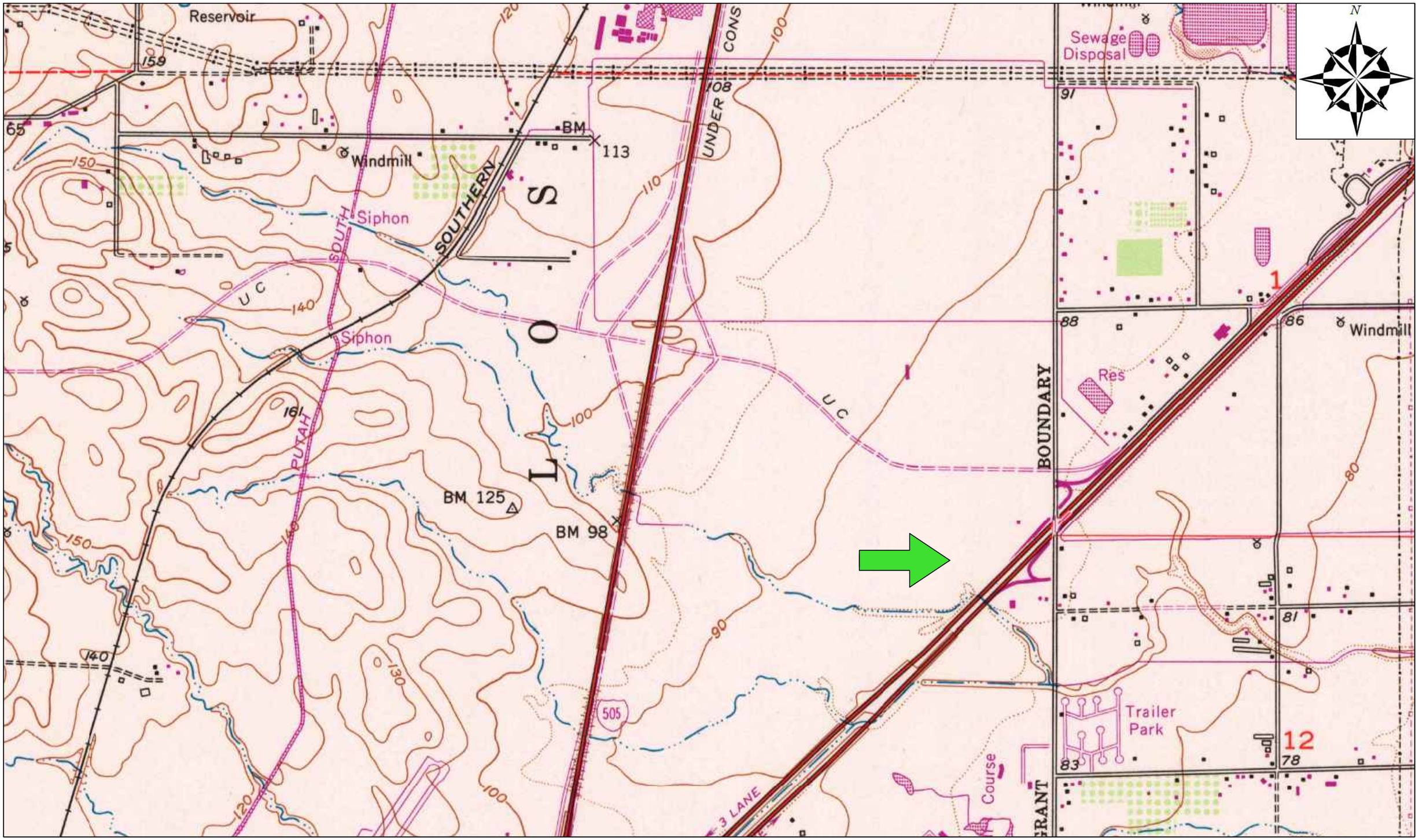
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M 02



ACHIEVEMENT ENGINEERING CORP.

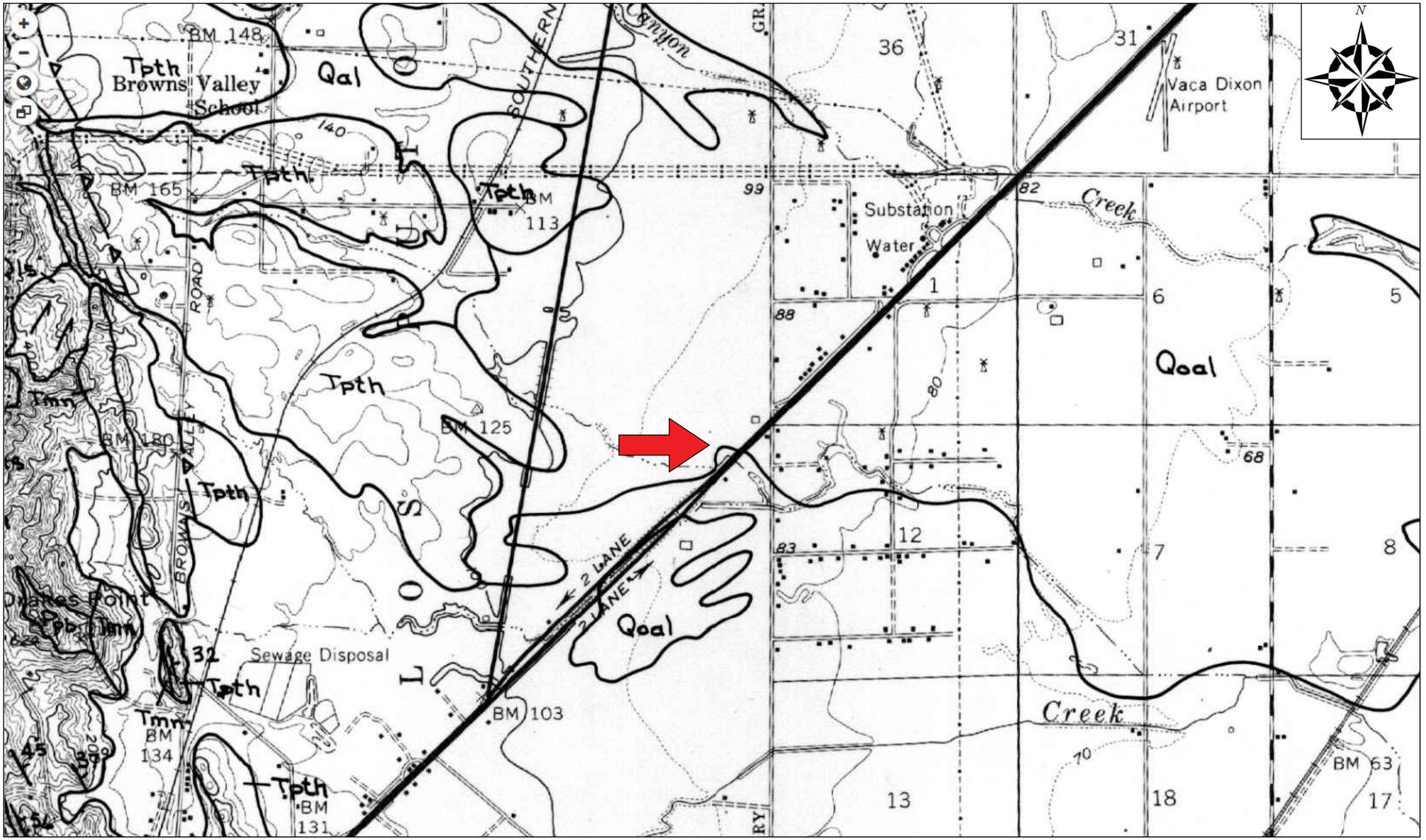
Project Number:	Project Title:
3711	H2S Prototype

Site Location on Allendale quadrangle 7.5' Series
Topographic Map by USGS

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M 03

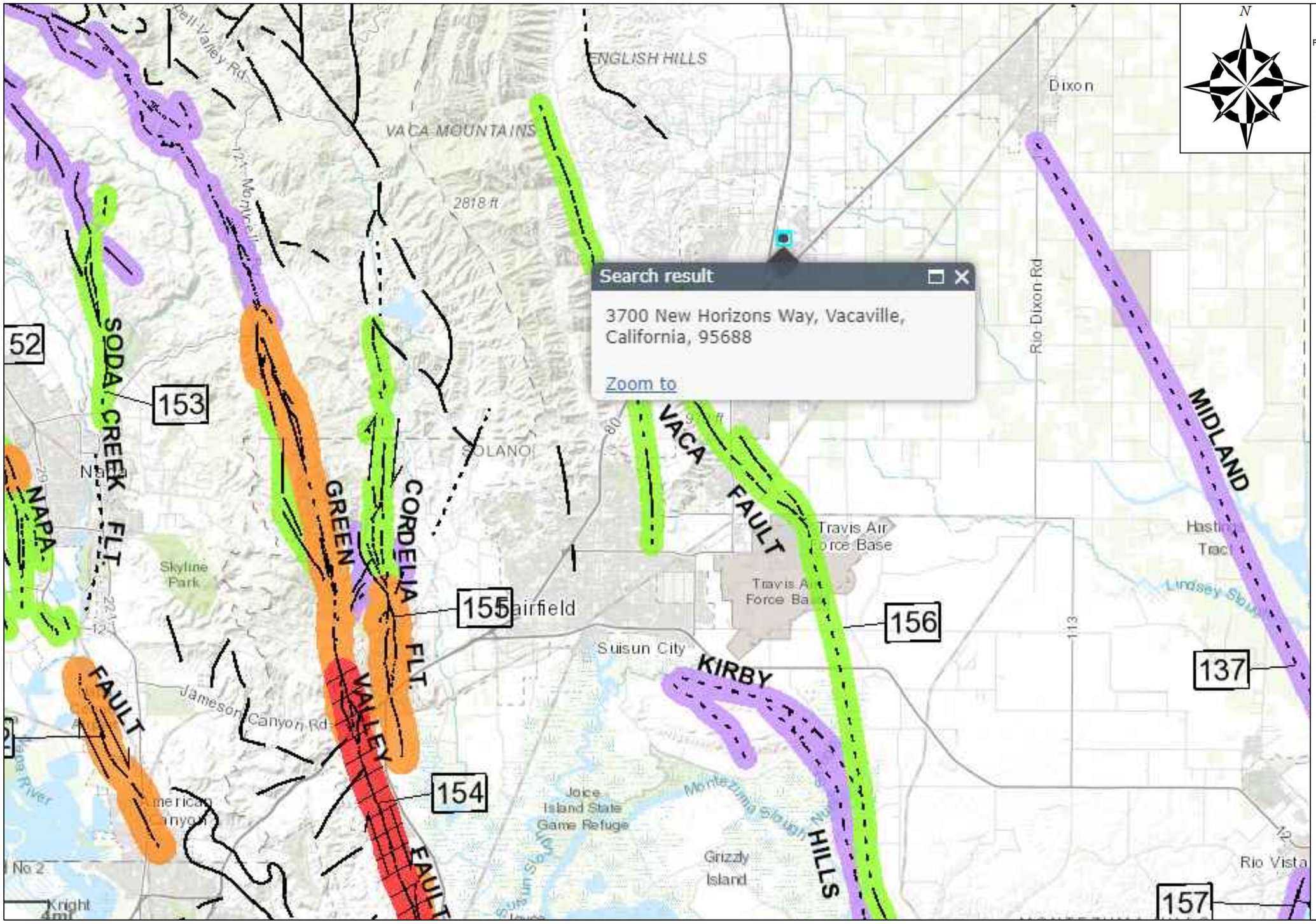


ACHIEVEMENT ENGINEERING CORP.

Project Number: 3711	Project Title: H2S Prototype	REVISIONS		
			MM/DD/YY	REMARKS
		0	02/19/19	...
		1	__/__/__	...
		2	__/__/__	...
		3	__/__/__	...
		4	__/__/__	

Site Location on Solano County and parts of Napa, Contra Costa, Marin, and Yolo Counties, California
Preliminary Geologic Map by Sims, J.D., Fox, K.F., Bartow, J.A., and Helley, E.J., 1973

M 04



N

FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)

Fault along which historic (last 200 years) displacement has occurred.

1906 1906
1838 1838
A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangle indicates known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.

1951
Date bracketed by triangles indicates local fault break.

1992
No triangle by date indicates an intermediate point along faultbreak.

CREEP
Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.

1969
1968 1968
Square on fault indicates where fault creep slippage has occured that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points).

Holocene fault displacement (during past 11,700 years) without historic record.

Late Quaternary fault displacement (during past 700,000 years).

Quaternary fault (age undifferentiated).

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement.

ADDITIONAL FAULT SYMBOLS

Bar and ball on downthrown side (relative or apparent).

Arrows along fault indicate relative or apparent direction of lateral movement.

Arrow on fault indicates direction of dip.

Low angle fault (barbs on upper plate).

OTHER SYMBOLS

491
Numbers refer to annotations listed in the appendices of the accompanying report.

Structural discontinuity (offshore) separating differing Neogene structural domains. May indicate discontinuities between basement rocks.

Brawley Seismic Zone, a linear zone of seismicity locally up to 10 km wide associated with the releasing step between the Imperial and San Andreas faults.

ACHIEVEMENT ENGINEERING CORP.

Project Number: 3711

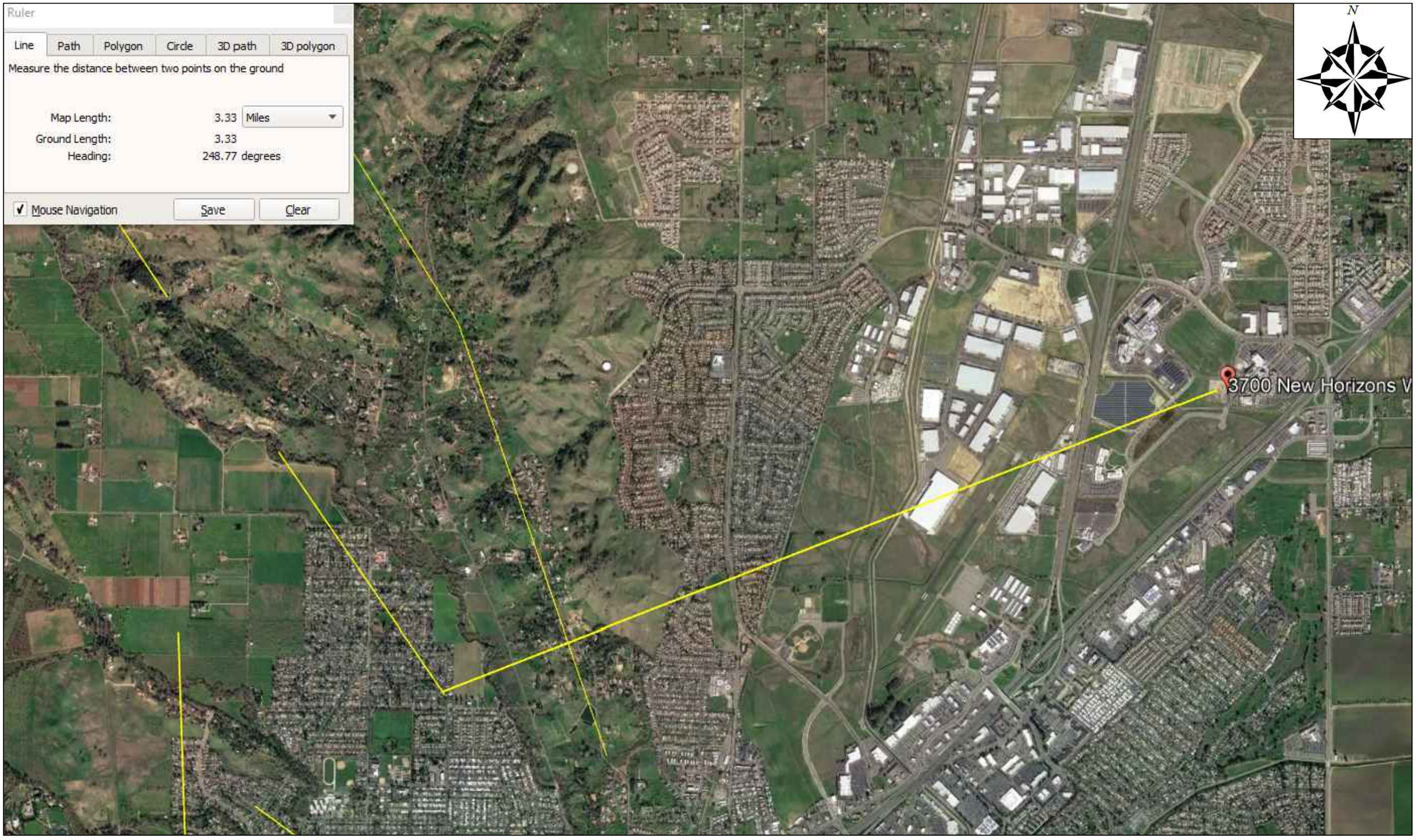
Project Title: H2S Prototype

Site Location on Fault Activity Map of California (2010) by CGS

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M 05



ACHIEVEMENT ENGINEERING CORP.

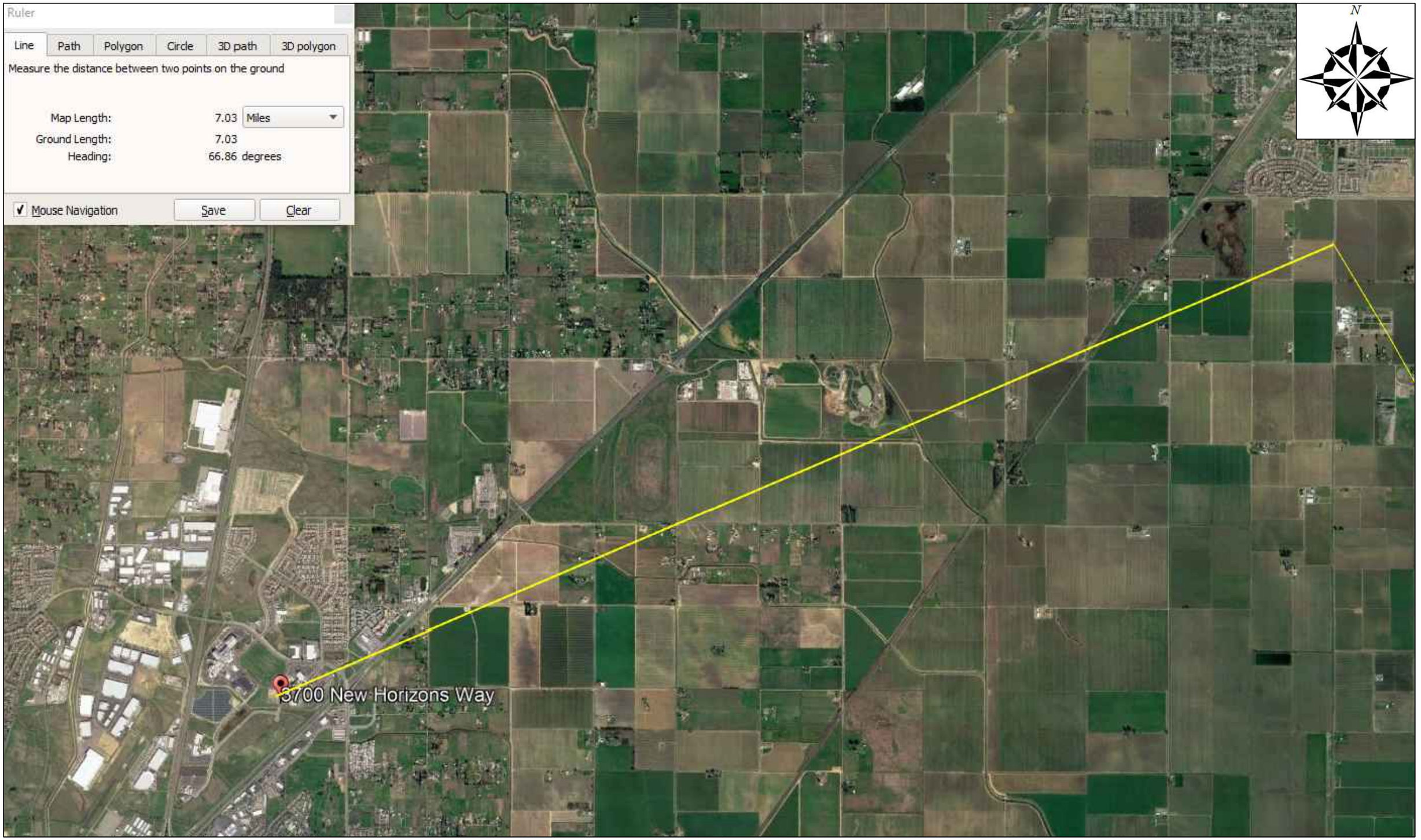
Project Number: 3711	Project Title: H2S Prototype
Site Location distance to Vaca fault (3.33 miles)	

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M

06

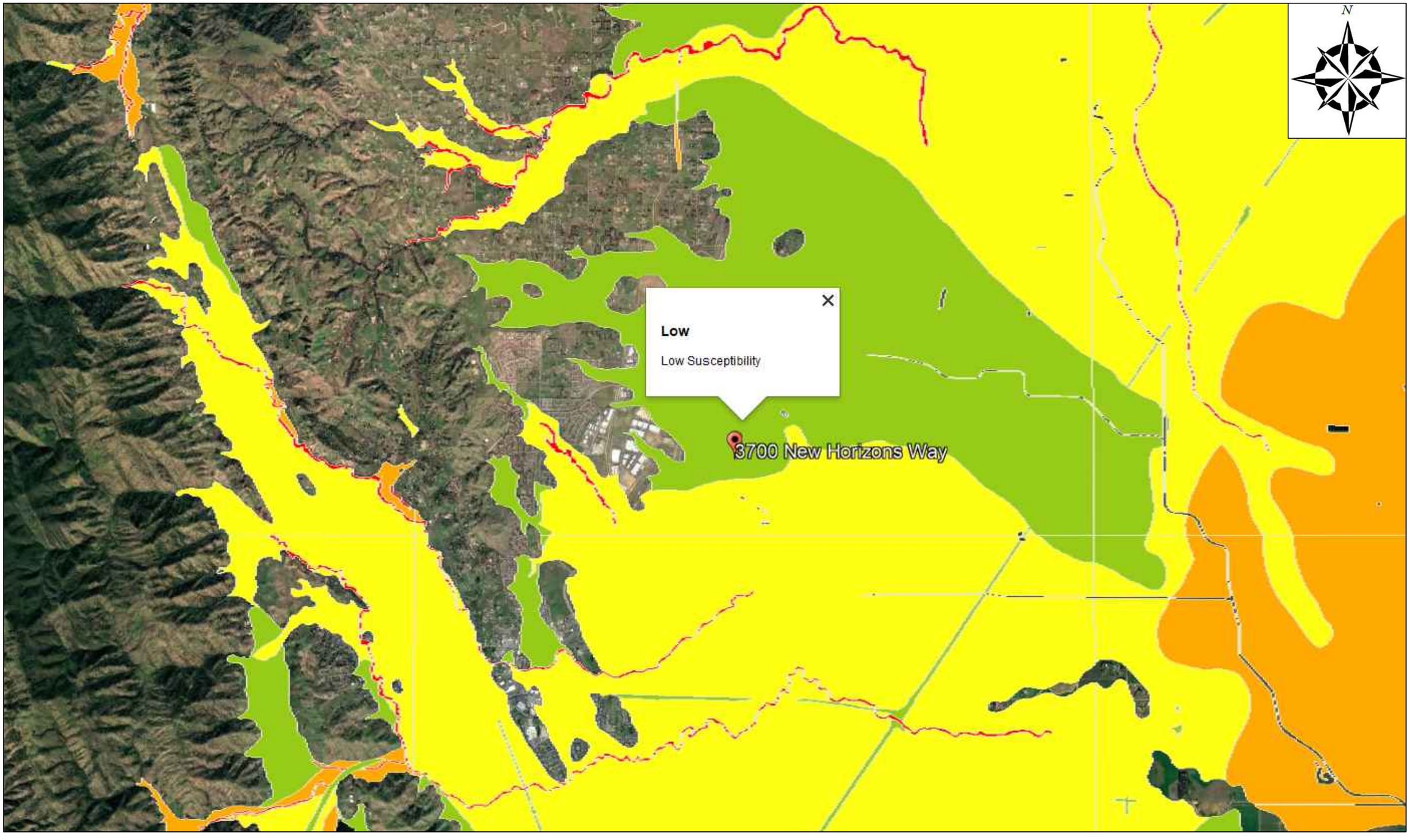


ACHIEVEMENT ENGINEERING CORP.	Project Number: 3711	Project Title: H2S Prototype
	Site Location distance to Midland fault (7.03 miles)	

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M 07



ACHIEVEMENT ENGINEERING CORP.

Project Number: 3711	Project Title: H2S Prototype
Project Location on Landslide map (Source USGS) site is located on Low Susceptibility Zone	

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M 08



ACHIEVEMENT ENGINEERING CORP.

Project Number: 3711	Project Title: H2S Prototype
Project Location on Landslide map (Source USGS) site is located on Flat Land	

REVISIONS

	MM/DD/YY	REMARKS
0	02/19/19	...
1	__/__/__	...
2	__/__/__	...
3	__/__/__	...
4	__/__/__	

M 09

Exhibit IV

USGS Seismic Design

ASCE 7 Hazards Report

Address:
3700 New Horizons Way
Vacaville, California
95688

Standard: ASCE/SEI 7-16
Risk Category: III
Soil Class: D - Default (see Section 11.4.3)

Elevation: 95.52 ft (NAVD 88)
Latitude: 38.392441
Longitude: -121.943904





Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.264	S_{D1} :	N/A
S_1 :	0.452	T_L :	8
F_a :	1.2	PGA :	0.528
F_v :	N/A	PGA_M :	0.633
S_{MS} :	1.517	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1.25
S_{DS} :	1.011	C_v :	1.353

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Wed Feb 20 2019

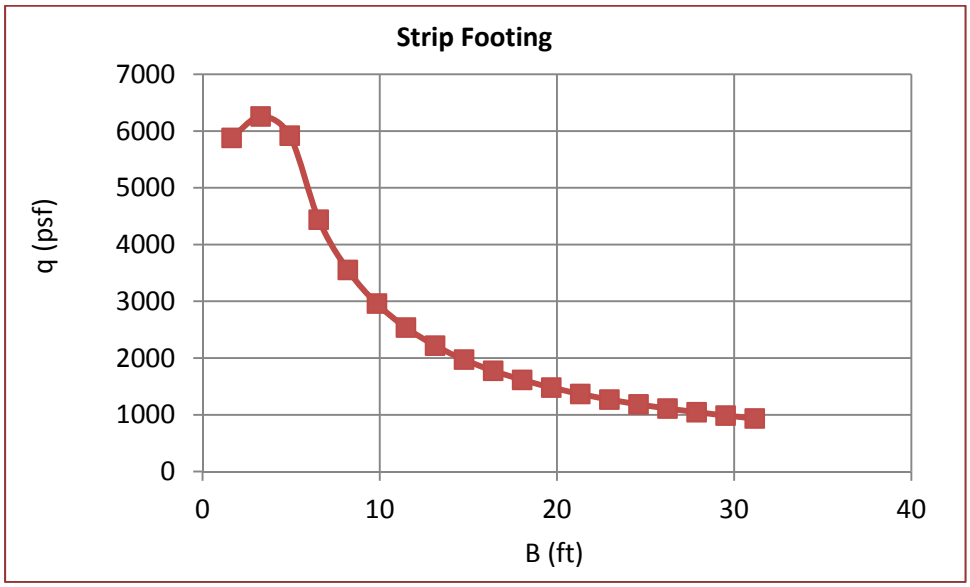
Date Source: USGS Seismic Design Maps

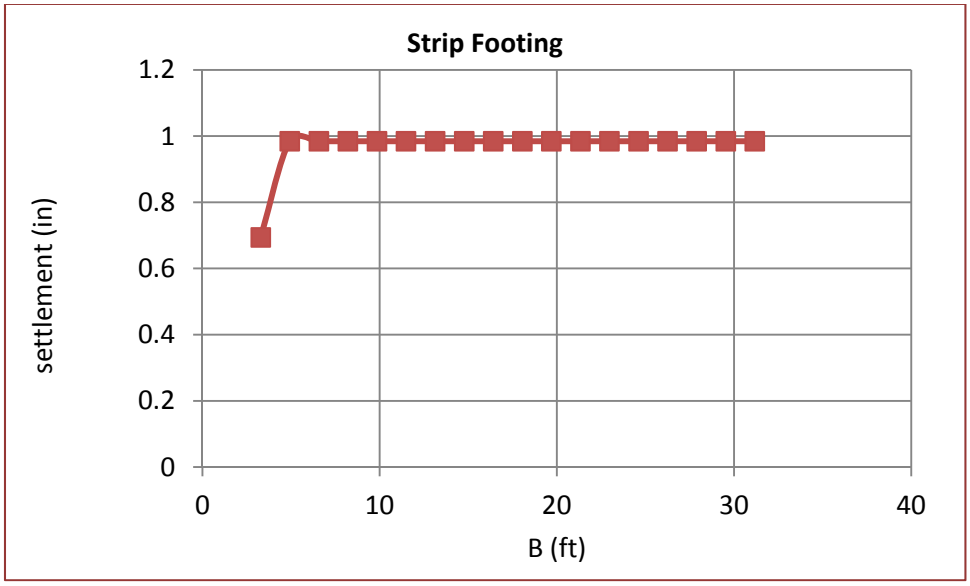
The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Exhibit V
Shallow Footing Design


Strip Footing
7000
6000
5000
4000
3000
2000
1000
0
q (psf)
0
10
20
30
40
B (ft)


Strip Footing
1.2
1
0.8
0.6
0.4
0.2
0
settlement (in)
0
10
20
30
40
B (ft)

Soil Inspection Record

ACHIEVEMENT ENGINEERING CORP.

Project Name:	H2S Prototype
Project Number:	3711
Project Address:	New Horizons Way Vacaville, CA 95688
Building Permit Number:	

The contractor shall notify Achievement Engineering in advance of his intention to do any activity that mentioned in the soil report area and shall permit the engineer to perform tests to establish the qualities of the construction.

No.	Title	Type		Date	Location	Approved	Note
		cont.	perio.				
100) General							
101	Conformance With Construction Documents						
200) Grading							
201	**Base Layer Inspection**						
2011	No Organic Material		√				
2012	Scarifying Base Level		√				
2013	No Deleterious Material		√				
2014	No Soft Spots		√				
2015	Moisture Content According to Soil Report		√				
202	**Fill Material Inspection**						
2021	Onsite Soil According to Soil Report		√				
2022	Import Material According to Soil Report		√				
203	**Compaction**						
2031	Layer Tickness According to Soil Report	√					
2032	Relative Density According to Soil Report	√					
2033	Moisture Content According to Soil Report	√					
204	**Sub Surface Drainage**						
2041	Plan Geometry, Depth, and slope		√				
2042	Material		√				
2043	Outlet		√				
205	**Slope**						
2051	Max. Allowable Slope						
2052	Building Clearance from Ascending Slope						
2053	Building Setback from Descending Slope						
300) Shallow Foundation							
301	**No. 201 for Bottom**		√				
302	**No. 202 for Bottom**		√				
303	**No. 203 for Bottom (for Expansive Soil)**	√					
304	**No. 204 for Bottom (for Expansive Soil)**		√				
305	**Geometry of Concrete Foundation**						
400) Deep Foundation							
401	**Pier Excavation Geometry**						
4011	Diameter of Pier						
4012	Depth According to Soil Report						
4013	Pier Spacing						
4014	Time between Excavation and Concrete Placement						
4015	Concrete Placement in Case of Groundwater						
402	**Grade Beam**						
4021	Geometry						
4022	Cardboard in Expensive Soil						
500) Slabs							
501	**No. 201**		√				
502	**No. 202**		√				
503	**No. 203**	√					
504	**No. 204**		√				
505	**Geometry**						
506	**Subslab Protection**		√				
600) Surface Drainage and Irrigation							
601	**Surface Gradient Away from Structure**		√				
602	**Downspots**		√				
603	**Swales According to Soil Report**						
604	**Planters and Irrigaion System**						
700) Utility Trench							
701	**Excavation According to Soil Report**		√				
702	**Compaction According to Soil Report**	√					
800) Retaing Wall							
801	**No. 201 for Bottom**						
802	**No. 202 for Bottom**						
803	**No. 203 for Bottom (for Expansive Soil)**						
804	**No. 204 for Bottom (for Expansive Soil)**						
805	**Geometry of Retaing Wall**						
806	**Geogrid**						

APPENDIX H

Phase I Environmental Site Assessment Report

August 14, 2019

Mr. Sharyar Ibrahim
Home 2 Suit by Hilton

Reference: Phase I Environmental Site Assessment Report for
3700 New Horizons Way
Vacaville, California 95688
AEC Project No. 3957

Dear Mr. Ibrahim:

Achievement Engineering Corp. (AEC) is pleased to submit this report of Phase I Environmental Site Assessment (ESA) for the above-referenced project. This report presents a review of the information collected through historical research and our site visit (including interview) and a summary of our professional judgment based on the information available.

We appreciate the opportunity to be of service to you on this project and would be happy to discuss our findings with you. We look forward to serving as your environmental/geotechnical engineer on your future projects.

Respectfully,

ACHIEVEMENT ENGINEERING CORP.



Sadaf Safaai, PE
Project Engineer

Copies: Mr. Sharyar Ibrahim

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APPENDIX B – TOPOGRAPHIC MAPS
APPENDIX C – AERIAL PHOTOGRAPHS
APPENDIX D – SANBORN MAPS
APPENDIX E– CITY DIRECTORY ABSTRACTS
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APPENDIX G – SITE PHOTOS
APPENDIX H – SITE MAP
APPENDIX I – SITE ZONE MAP
APPENDIX J – BUILDING PERMIT REPORT
APPENDIX K – TAX REPORT
APPENDIX L – ENVIRONMENTAL LIEN

1- EXECUTIVE SUMMARY

Achievement Engineering Corp. (AEC) was retained by Home 2 Suit by Hilton to perform a Phase I Environmental Site Assessment (ESA) of the property located at 3700 New Horizons Way, Vacaville, California, 95688. The following summary highlights the significant findings and conclusions representing our best professional judgment based on the information and data available to us during the course of this assessment. The reader is referred to the report text for full details.

PHYSICAL SETTING

- The subject site is located at 3700 New Horizons Way, Vacaville, California, 95688, with coordinates of 38° 23' 14.20'' N and 121° 56' 31.53'' W.
- The topography of the site is relatively flat at the target property with an average elevation of approximately 91.0 feet (General topographic gradient is ESE).
- It appears that the upper soil near the site is San Ysidro (sandy loam) and Clear Lake (clay), Class D – with very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer, moderately well drained and poorly drained respectively, with high corrosion potential.
- Rock stratigraphic unit geologic age identification is as follows:

Era: Cenozoic

Category: Stratified Sequence

System: Quaternary

Series: Quaternary

Code: Q (decoded above as Era, System & Series)

The subject site does not contain any evidence of jurisdictional non-tidal wetlands (national or state).

HISTORICAL DATA

The subject site is currently owned by O.K. and B (a California general partnership) and is located on the south of New Horizon Way and west of Akerly Drive at 3700 New Horizons Way, Vacaville, California, 95688, within mixed use BP (Business Park) zone of Vacaville.

The subject site comprised of a lot with a total area of approximately 2.4 acre. Review of the historical data available for the subject site reveals that at least since 1937 the lot has been vacant. The first city directory listing for this property belongs to 2010 (the second one is 2014) as Kaiser

Permanente Clinic, though aerial photos of 2009, 2012 and 2016 show that the lot is vacant, so most probably this clinic is the same medical center in front of this property as Kaiser Permanente Vacaville Medical Center, just listed under this address.

Also, review of the historical data for adjacent properties of the subject site using the City Directory Abstract (refer to Appendix E) provided by EDR and aerial photos (Appendix C) reveals that for the most part, uses are mixed service, business and industrial. The subdivision has been developed between 1993 and 2006 and a few businesses and industries are listed at 1000 New Horizon Way since 2000.

ENVIRONMENTAL LIEN

The search by EDR indicates that no environmental lien was found for the subject property. Also no OTHER ACTIVITY AND USE LIMITATIONS (AULs) was found for this property. The Appendix L exhibits the search results.

SITE RECONNAISSANCE

Hazardous Materials –Hazardous chemicals and/or products, as defined in the Code of Federal Regulations 29 CFR 1910.1200, is not used per record and was not observed at the subject site.

Storage Tanks – Currently, no underground storage tank is being used at the subject site.

Waste Generation – At the time of this ESA, no hazardous or regulated wastes has been observed at the Site.

Surface Areas – Currently, The subject property consists of a 2.4 acre undeveloped land. The property is vacant and the cover is bushes/dirt.

Adjacent Properties – Adjacent properties are mixed use (commercial, services and industrial) Two major properties are Kaiser Permanente Clinic on the east of the site and a business park at 1000 New Horizon Way.

CONCLUSIONS

Based on the currently available information, the subject site is currently owned by O.K. and B (a California general partnership), located at 3700 New Horizons Way, Vacaville, California within mixed use BP (Business Park) zone of Vacaville. The site itself has not been listed in any data base searched.

There is one site listed on various databases in the close proximity to and at higher elevation of the subject site;

1- Kaiser Permanente Vacaville medical center, located at 3700 Vaca Valley Pkw, 975 ft. from the subject site in NNE direction and a higher elevation.

This site has a UST (Underground Storage Tank) and is Small Quantity Generator (Handler) that means it generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time.

2- Kaiser Vacaville Helistop that is listed on CERS HAZ WASTE and is located ENE of the subject site at 1 QUALITY DRIVE, 1176 ft. from it and at a lower elevation.

The UST at this site is back to compliance since 2015 and also the site is a small generator of hazardous waste.

3- The last neighboring site is NORTH VILLAGE ELEMENTARY, at Vaca Valley Parkway, in ENE direction and 4179 ft. away from the site. This site is listed on Envirostor, but is relatively far from the site and at a higher elevation, at the opposite direction of the groundwater flow, and due the low infiltration rate of the upper soils, moving of any contamination toward the subject site is very unlikely.

The review of the aerial photos shows that the site has been undeveloped and vacant at least since1937. The neighboring services and businesses have been established between 1993 and 2006 and the subdivision is relatively new. No record of release or leak of hazardous waste or non-compliance was found at the subject site or neighboring services/business, thus no evident recognized environmental condition (REC) exists at the subject site.

No disturbed soil areas, discolored or polluted water, unusual or noxious, floor drains, PCB containing transformers or nearby former railroad tracks was observed at the subject site.

2- PURPOSE

The purpose of this Phase I ESA is limited to providing an assessment of current environmental conditions at the subject site, to the extent feasible, based on the data available and as referenced. The assessment was conducted to identify and highlight recognized environmental conditions (REC). REC can be defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment, 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions. The following scope of work was performed to identify REC associated with the subject site:

- A review and evaluation of federal and state databases systems including Federal NPL, Federal Delisted NPL site list, Federal CERCLIS, Federal RCRA (CORRACTS and non- CORRACTS) facilities list, Federal CERCLIS NFRAP, Federal RCRA Generator list, Federal institutional controls/engineering controls registries, Federal ERNS list, State- and tribal, State and tribal landfill and/or solid waste disposal site lists, State and tribal leaking storage tank lists, State and tribal registered storage tank lists, State and tribal voluntary cleanup sites and State and tribal Brownfields sites, Local Brownfield lists, Local Lists of Landfill / Solid Waste Disposal Sites, Local Lists of Hazardous waste / Contaminated Sites, Local Registered Tanks, Local Land Records, Records of Emergency Release Reports, EDR High Risk Historical Records, EDR Recovered Government Archives and Other Ascertainable Records, as indicated in Appendix A, pages 5 and 6.

- An evaluation of the physical characteristics of the site including topography, geology, soil type, wetlands, and flood plain information.

- A review and evaluation of standards practiced including historical information available for the subject site such as aerial photographs, zoning records and historical maps, reviewing land uses by the aid of City Directory.

- A site visit searching for physical indication of any contamination, documenting it with photographs and interviews with land owners/local people working in the area looking for history of any contamination or release.

3- METHODOLOGY USED

The following assessment and pertaining report were prepared in accordance with ASTM E 1527-2013, Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process. We used the following methods to evaluate the environmental conditions at the subject site.

A review of the regulatory status of the subject site as it pertains to regulated activities involving the use of hazardous chemicals, the generation of hazardous waste, the treatment, storage, or disposal of hazardous waste, or the release of regulated substances. AEC used services of Environmental Data Resources, Inc. (EDR) to conduct the appropriate radius searches of the subject site of this report in conformance with the scope and limitations of the above referenced ASTM. The Standard approximate minimum search review distances requirements are as follows (*The ones in italic font do not have standard distances, but have been reviewed under the distances specified, if any data available for the subject site*):

<u>To One (1) Mile:</u>

- Federal National Priorities List (NPL).
- Resource Conservation and Recovery Act - Treatment, Storage, and Disposal Facilities (RCRA-TSD).
- Federal RCRA CORRACTS facilities list
- State- and tribal-equivalent NPL
- *Notify 65*

<u>To One-Half (0.5) of a Mile:</u>

- Federal Delisted NPL site list
- Federal CERCLIS list
- Federal CERCLIS NFRAP site list
- Solid Waste Disposal Facilities, Active and Inactive (SWLF)
- Federal RCRA non-CORRACTS TSD facilities list
- State- and tribal-equivalent CERCLIS
- State and tribal landfill and/or solid waste disposal site lists
- State and tribal leaking storage tank lists (LUST)
- State and tribal voluntary cleanup sites
- *HIST CORTESE*
- *Local Lists of Hazardous waste / Contaminated Sites*

<u>To One-Quarter (0.25) of a Mile:</u>

- *RCRA-SQG*
- *RCRA-LQG*

- *RCRA-CESQG*
- *Local Lists of Registered Storage Tanks (SWEEPS, HIST UST, CA FID UST, CERS TANKS)*
- *Available State Lists of Underground Storage Tanks (USTs).*
- *CUPA Listings*
- *DRYCLEANERS*

To One-Eighth (0.125) of a Mile:

- Environmental Response Notification System (ERNS)
- Resource Conservation and Recovery Act - Large Quantity Generators (RCRA- LgGen)
- Resource Conservation and Recovery Act - Small Quantity Generators (RCRA- SmGen)
- *EDR Hist Cleaner*
- *EDR Hist Auto list*
- Federal institutional controls/engineering controls registries

A copy of the EDR Report is attached as Appendix A. This report also includes the time that information requested, last updated by EDR and last updated by the original reference.

- AEC has forwarded correspondences to Solano County Environmental Health Department (SCEHD) and Vacaville Fire Department in compliance with the Freedom of Information Act (FOIA). The results of all inquiries will be documented in Appendix F. DTSC (Department of Toxic Substances Control) Archives will also be consulted.

- Historical research of the subject site back to year 1907 was conducted (when data available). The history of site development and usage was developed using the following historical sources:
    - Aerial photographs available from EDR back to 1937.
    - City directories available from EDR back to 2000.
    - Historical Topographic maps obtained from EDR back to 1908.
    - Certified Sanborn maps obtained for this address was not available.

AEC representative visually and physically observed the peripheral surface areas of the subject site on 9 August, 2019. In addition, the observations of the adjacent properties to identify high-risk and contamination migration concerns were made by a walk-through of the accessible sections of the referenced site and its surroundings. An interview was conducted with a receptionist at the Kaiser Permanente medical center in the east of the property that the responses were used in preparation of this report.

4- REGULATORY REVIEW

4-1- **Standard Environmental Records Reviewed.**

The target property was not listed in any of the databases searched by EDR. Among the standard databases searched by EDR, the following can be named (for full details, see end of Appendix A):

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-CESQG RCRA - Conditionally Exempt Small Quantity Generator
Federal institutional controls / engineering controls registries
LUCIS Land Use Control Information System
US ENG CONTROLS Engineering Controls Sites List
US INST CONTROL Sites with Institutional Controls
Federal ERNS list
ERNS Emergency Response Notification System
State- and tribal - equivalent NPL
CA RESPONSE: State Response Sites
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 landfill and/or solid waste disposal site lists
SWF/LF Solid Waste Information System
State and tribal registered storage tank lists
FEMA UST Underground Storage Tank Listing
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 Brownfields Sites Listing

Additional Environmental Records are listed in pages 4 to 7, Appendix A.

4-2- Surrounding Sites Search Results

4-2-1- Federal RCRA Generator List:

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/25/2019 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

RCRA-SQG		
Equal/Higher Elevation	**Address**	**Direction / Distance**
KAISER PERMANENTE	***3700 VACA VALLEY PKW***	***NNE 1/8 - 1/4 (0.185 mi.)***

4-2-2- 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 identifies 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 04/29/2019 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

ENVIROSTOR		
Equal/Higher Elevation	**Address**	**Direction / Distance**
NORTH VILLAGE ELEMEN	***VACA VALLEY PARKWAY/***	***NNE 1/2 - 1 (0.791 mi.)***

4-2-3- State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

UST Equal/Higher Elevation		
Equal/Higher	**Address**	**Direction / Distance**
KAISER PERMANENTE	***3700 VACA VALLEY PKW***	***NNE 1/8 - 1/4 (0.185 mi.)***

UST Lower Elevation		
Lower	**Address**	**Direction / Distance**
KAISER FOUNDATION HO	***1 QUALITY DR***	***ENE 1/8 - 1/4 (0.223 mi.)***

4-2-4- Local Lists of Hazardous waste / Contaminated Sites

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.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 04/09/2019 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

CERS HAZ WASTE Lower Elevation		
Lower	**Address**	**Direction / Distance**
KAISER VACAVILLE HEL	***1 QUALITY DRIVE***	***ENE 1/8 - 1/4 (0.223 mi.)***

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.

A review of the CERS TANKS list, as provided by EDR, and dated 04/09/2019 has revealed that there is 1 CERS TANKS site within approximately 0.25 miles of the target property.

CERS TANKS Lower Elevation		
Lower	**Address**	**Direction / Distance**
KAISER VACAVILLE HEL	***1 QUALITY DRIVE***	***ENE 1/8 - 1/4 (0.223 mi.)***

4-2-5- Other Ascertainable Records

RCRA NonGen / NLR: 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.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/25/2019 has revealed that there are 3 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

RCRA NonGen / NLR Equal/Higher Elevation		
Equal/Higher	**Address**	**Direction / Distance**
NOVICI BIOTECH LLC	***3333 VACA VALLEY PKW***	***NNE 1/8 - 1/4 (0.249 mi.)***
NOVARTIS VACA VALLEY	***3333 VACA VALLEY PKW***	***NNE 1/8 - 1/4 (0.249 mi.)***

RCRA NonGen / NLR Lower Elevation		
Lower	**Address**	**Direction / Distance**
KAISER FOUNDATION HO	***1 QUALITY DR***	***ENE 1/8 - 1/4 (0.223 mi.)***

4-2-6- Unmapped addresses

Due to poor or inadequate address information, the following sites were not mapped:

Maple Wood Subdivision	LUST
SFPP LP ELMIRA BOOSTER STN	RCRA-SQG, CPS-SLIC

4-3- OTHER REGULATORY INFORMATION

In addition to the above referenced databases, EDR supplied information from numerous existing government databases. The list of the databases is provided in the attached EDR report (Appendix A).

4-4- **FREEDOM OF INFORMATION ACT (FOIA) REQUEST**

AEC has forwarded correspondences to Solano County Environmental Health Department (SCEHD) and Vacaville Fire Department in compliance with the Freedom of Information Act (FOIA). The results of all inquiries will be documented in Appendix F. DTSC (Department of Toxic Substances Control) Archives will also be consulted.

5- PHYSICAL SETTING

5-1- TOPOGRAPHY

The United States Geological Survey (USGS) maps were reviewed. The topography of the subject site is relatively flat and general topographic gradient is ESE. The site itself is at an approximate average elevation of 91.0 feet above mean sea level. Elevation profiles are provided in Appendix A under physical setting.

5-2- SOILS

It appears that the upper soil near the site is San Ysidro (sandy loam) and Clear Lake (clay), Class D – with very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer, moderately well drained and poorly drained respectively, with high corrosion potential.

5-3- FLOOD PLAIN INFORMATION

The Federal Emergency Management Agency (FEMA), through its National Flood Insurance Program, has published Flood Insurance Rate Maps that delineate flood zones. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 100-year, or 500-year period have been selected as having special significance for flood plain management and for flood insurance rates. These events, commonly termed the 100- and 500-year floods, have a 1 and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. FEMA has made delineations based on whether a particular area experiences minimal flooding, is within the boundary of the 100-year flood, or is within the boundary of the 500-year flood. The Site is noted on FEMA Map Number 06095C0164E (FEMA firm Flood data). The site is not located within 100- year or 500-year flood zones.

5-4- GEOLOGY

The project site is located in the Great Valley geometric province of California, which lies between the Coast Ranges and Sierra Nevada provinces. The Great Valley province is underlain by an alluvial plain approximately 50 miles wide and 400 miles long, which is drained by the Sacramento and San Joaquin rivers (USGS, 2003). This region is typically underlain by sedimentary and metasedimentary alluvium which was formed by erosion of the two mountain ranges during the Mesozoic and Cenozoic eras.

Mesozoic rocks include marine Cretaceous sandstone and shale, as well as metamorphosed clastic and volcanic rocks of the Franciscan assemblage. The Cenozoic rocks consist of strata of continental and marine origin, and Pliocene-Pleistocene volcanic rocks (City of Vacaville, 1998).

The western portion of Solano County is dominated by mountains and valleys while the southern and eastern portions are dominated by flat broad valleys, marshes, sloughs, and low-lying hills. These low lands are associated with the Sacramento River Alluvial Fan (Solano County, 2008).

Geologic subunits in Solano County include Quaternary surficial deposits, early Pleistocene and older rocks, and the Franciscan Complex. The following geological unit is present at the site:

Q oal :Alluvium (late and early Pleistocene)—Sand, silt, clay, and gravel deposits with little or none of the original geomorphic expression preserved. Moderately to extremely dissected, in places tens or hundreds of feet above the current depositional surface, and capped by well-developed soils. In Yolo County, this unit includes the Red Bluff Formation.

Certain types of soils have characteristics that make them more susceptible to geotechnical hazards, such as erosion and expansion. Soils subject to expansion increase when water is added and shrink when water dries out. The Solano County Safety Element map classifies most of Solano County as having soils with a high shrink-swell potential, which would indicate that expansive soils could be present. The primary soil types in the Vacaville area are silty, sandy, and clay loams, with a smaller portion being made up of purely clay soils. Though not all types of clay are expansive, soils with a clay component are more prone to expansion. Approximately 64 percent of Vacaville's soils contain at least some clay component.

Rock stratigraphic unit geologic age identification is as follows:

Era: Cenozoic
Category: Stratified Sequence
System: Quaternary
Series: Quaternary
Code: Q (decoded above as Era, System & Series)

5-5- SURFACE WATER/GROUND WATER HYDROLOGY

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. Since ascertainable well data for the subject site is not available, it is necessary to rely on EDR to determine ground water flow. EDR utilized the information available from federal and state well databases from the nearest wells located near to the subject site. The direction of the flow for the existing wells farther from the subject site that can be helpful in deciding if the contamination can travel toward the subject site has been presented in EDR, Appendix A, TC5743466.2s Page A-9 .The groundwater levels vary near the subject site and has been reported to have a depth of 10 to 30 ft. bgs in EDR Report. The direction of flow, in the vicinity of the site is also variable but has been determined to be SW. AEC advanced three borings at the subject site for the proposed development as part of a geotechnical investigation report on 19 February 2019; the depths to the groundwater varied from 13 to 16 ft., bgs.

6- HISTORICAL REVIEW

6-1- PRESENT OWNER

The subject site is currently owned by O.K. and B (a California general partnership).

6-2- AERIAL PHOTOGRAPHS

A review of historical aerial photographs for the years 1937, 1952, 1968, 1974, 1984, 1993, 2006, 2009, 2012 and 2016 was performed (Appendix C). Review of the historical data available for the subject site reveals that the site has been vacant and undeveloped through these years.

6-3- HISTORICAL MAPS

Sanborn Fire Insurance maps were requested from EDR. EDR certified that the complete holdings of the Sanborn Library, LLC collection have been searched based on the supplied target property information and no map for the subject site was found (Appendix D).

The first city directory listing for this property belongs to 2010 (the second one is 2014) as Kaiser Permanente Clinic, though aerial photos of 2009, 2012 and 2016 show the lot is vacant, so most probably this clinic is the same medical center in front of this property as Kaiser Permanente Vacaville Medical Center, just listed as this address.

6-4- HISTORICAL CHAIN OF TITLE REPORT

Obtaining a Historical Chain of Title Report is beyond the scope of services of this Phase I ESA report for the subject site.

6-5- ZONING AND LAND USE RECORDS

By reviewing Vacaville zoning map, the target property located at 3700 New Horizons Way, Vacaville, California, 95688 is in mixed use BP (Business Park) zone of Vacaville. (Refer to Appendix I).

7- SITE RECONNAISSANCE

7-1- HAZARDOUS SUBSTANCES AND CONTAINERS

During our site visit dated 9 August, 2019, no pools or sumps containing possible hazardous substances or petroleum products were observed. Interesting enough a gas or oil well is within ½ mile radius of the subject site, per EDR report.

7-2- FACILITY STORAGE TANKS

Our observations did not reveal the presence of any tank on the subject site. In addition, no evidence of underground pipelines bisecting the subject site was observed during the site visit dated 9 August, 2019. No current evidence of above ground gasoline or diesel storage tanks was observed at the subject site. The historical and regulatory record review revealed no evidence of any USTs previously used at the property.

7-3- SOLID WASTE GENERATION AND DISPOSAL

The property is currently a vacant lot and no regulated solid waste is generated at the property.

7-4- STORM WATER AND WASTE WATER SYSTEMS

The area has been developed between 1993 and 2006, so the subdivision is relatively new. Storm water system was not observed at the site due to the fact that the lot is vacant and undeveloped, but it seems that because of the neighboring medical center, and new development, storm water system should be available in the neighborhood. Public water and sewer services are also available to the area. During the ESA, no wastewater pretreatment or discharge control devices were observed or reported. The subject site did not contain any pits, ponds, or lagoons.

7-5- SURFACE AREAS

The subject property consists of a parcel of approximately 2.4-acres. This site is completely flat, and ground is mostly coved by grass and bushes. There is a small hill located in the center of the lot covered with grass (See Appendix G).

7-6- AREA RECONNAISSANCE

During the site visit dated 9 August, 2019, observations were made of the adjacent properties. These observations were made to identify recognized environmental conditions that have the

potential for impacting the subject site. No issues of environmental concern were obvious as the site visit was conducted except existence of a medical center located 975 ft., northeast of the subject property.

8- ADDITIONAL ENVIRONMENTAL CONCERNS

8-1- WETLANDS

Wetlands include freshwater marshes, wet meadows, bogs, shrub swamps, wooded swamps, bottomland hardwood forests, shallow ponds, seepage areas, and springs. They range in size from small isolated depressions surrounded by uplands to large complexes thousands of acres in size on the flood plains of major rivers. Review of the available site information did not identify any jurisdictional wetlands (State Wetlands or National Wetlands Inventory) at the subject site.

8-2- AIR EMISSIONS

No activity generating any air emission was recognized by the land use in the subject site.

9- FINDINGS AND CONCLUSIONS

AEC performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 Phase I Environmental Site Assessment Process of the property located at 3700 New Horizons Way, Vacaville, California, 95688. Any exceptions to, or deletions from this practice are described in Section 10.0 of this report. AEC has additionally made the following observations:

Based on the currently available information, the subject site is currently owned by O.K. and B (a California general partnership), located at 3700 New Horizons Way, Vacaville, California within mixed use BP (Business Park) zone of Vacaville. The site itself has not been listed in any data base searched.

There is one site listed on various databases in the close proximity to and at higher elevation of the subject site;

1- Kaiser Permanente Vacaville medical center, located at 3700 Vaca Valley Pkw, 975 ft. from the subject site in NNE direction and at a higher elevation.

This site has a UST (Underground Storage Tank) and is Small Quantity Generator (Handler) that means it generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time.

2- Kaiser Vacaville Helistop that is listed on CERS HAZ WASTE and is located ENE of the subject site at 1 QUALITY DRIVE, 1176 ft. from it and at a lower elevation.

The UST at this site is back to compliance since 2015 and also the site is a small generator.

3- The last neighboring site is NORTH VILLAGE ELEMENTARY, at Vaca Valley Parkway, in ENE direction and 4179 ft. away from the site. This site is listed on Envirostor, but is relatively far from the site and at a higher elevation, at the opposite direction of the groundwater flow, and due the low infiltration rate of the upper soils, moving of any contamination toward the subject site is very unlikely.

The review of the aerial photos shows that the site has been undeveloped and vacant at least since1937. The neighboring services and businesses have been established between 1993 and 2006 and the subdivision is relatively new. No record of release or leak of hazardous waste or non-compliance was found at the subject site or neighboring services/business, thus no evident recognized environmental condition (REC) exists at the subject site.

No disturbed soil areas, discolored or polluted water, unusual or noxious, floor drains, PCB containing transformers or nearby former railroad tracks was observed at the subject site.

10- LIMITATIONS

The following limitations and exceptions are noted:

- AEC relied on Environmental Data Resources, Inc. (EDR) for regulatory review information (i.e., NPL, CERCLIS, CERC, etc.) and the Directory listing, While it is believed that the third party information contained in this report is reliable, AEC cannot guarantee the accuracy or completeness of this information.

- The scope of this assessment does not include site testing of ASTM non-scope considerations that include but are not limited to the following: asbestos-containing materials; radon; lead-based paint; and lead in drinking water.

- The scope of this assessment does not include any testing or sampling of materials such as soils, water, air, etc.

- The scope of this assessment does not include the evaluation of any subsurface conditions.

- Visual and physical observations were limited to accessible areas of the subject site and the areas of the site that AEC is contractually obligated.

- Any additional limitations to the methodology has been used, is specifically addressed in the relevant sections of this report and Appendices.

- This Phase I Environmental Site Assessment report has been prepared for the benefit of the Home 2 Suit by Hilton and may solely be relied upon by its employees and affiliates, and their counsel and consultants.

APPENDIX A – EDR REPORT

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.2s
August 06, 2019

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

3700 NEW HORIZONS WAY
VACAVILLE, CA 95688

COORDINATES

Latitude (North):	38.3872790 - 38° 23' 14.20''
Longitude (West):	121.9420940 - 121° 56' 31.53''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	592394.3
UTM Y (Meters):	4249109.0
Elevation:	91 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5629044 ALLENDALE, CA
Version Date:	2012
South Map:	5619708 ELMIRA, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140606
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3700 NEW HORIZONS WAY
VACAVILLE, CA 95688

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	KAISER PERMANENTE	3700 VACA VALLEY PKW	UST	Higher	975, 0.185, NNE
A2	KAISER PERMANENTE	3700 VACA VALLEY PKW	RCRA-SQG	Higher	975, 0.185, NNE
B3	KAISER FOUNDATION HO	1 QUALITY DR	UST	Lower	1176, 0.223, ENE
B4	KAISER VACAVILLE HEL	1 QUALITY DRIVE	CERS HAZ WASTE, CERS TANKS, NPDES, CERS	Lower	1176, 0.223, ENE
B5	KAISER FOUNDATION HO	1 QUALITY DR	RCRA NonGen / NLR	Lower	1176, 0.223, ENE
C6	NOVICI BIOTECH LLC	3333 VACA VALLEY PKW	RCRA NonGen / NLR	Higher	1317, 0.249, NNE
C7	NOVARTIS VACA VALLEY	3333 VACA VALLEY PKW	RCRA NonGen / NLR	Higher	1317, 0.249, NNE
8	NORTH VILLAGE ELEMEN	VACA VALLEY PARKWAY/	ENVIROSTOR, SCH	Higher	4179, 0.791, NNE

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-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

EXECUTIVE SUMMARY

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
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
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
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
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

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

FUDS ---- Formerly Used Defense Sites
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)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
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

EXECUTIVE SUMMARY

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

Federal RCRA generators list

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/25/2019 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KAISER PERMANENTE EPA ID:: CAR000016592	3700 VACA VALLEY PKW	NNE 1/8 - 1/4 (0.185 mi.)	A2	8

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 04/29/2019 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
NORTH VILLAGE ELEMEN	***VACA VALLEY PARKWAY/***	***NNE 1/2 - 1 (0.791 mi.)***	***8***	***32***

Facility Id: 48020003
Status: No Action Required

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KAISER PERMANENTE	3700 VACA VALLEY PKW	NNE 1/8 - 1/4 (0.185 mi.)	A1	8
Database: UST, Date of Government Version: 06/10/2019 Facility Id: 50750				

Lower Elevation	Address	Direction / Distance	Map ID	Page
KAISER FOUNDATION HO	1 QUALITY DR	ENE 1/8 - 1/4 (0.223 mi.)	B3	9
Database: UST, Date of Government Version: 06/10/2019 Database: SOLANO CO. UST, Date of Government Version: 06/04/2019 Facility Id: 50750 Facility Status: A Facility Id: 48-000-050750				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

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.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 04/09/2019 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
KAISER VACAVILLE HEL	***1 QUALITY DRIVE***	***ENE 1/8 - 1/4 (0.223 mi.)***	***B4***	***10***

Local Lists of Registered Storage Tanks

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.

A review of the CERS TANKS list, as provided by EDR, and dated 04/09/2019 has revealed that there is

EXECUTIVE SUMMARY

1 CERS TANKS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
KAISER VACAVILLE HEL	***1 QUALITY DRIVE***	***ENE 1/8 - 1/4 (0.223 mi.)***	***B4***	***10***

Other Ascertainable Records

RCRA NonGen / NLR: 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.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/25/2019 has revealed that there are 3 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NOVICI BIOTECH LLC EPA ID:: CAL000324397	3333 VACA VALLEY PKW	NNE 1/8 - 1/4 (0.249 mi.)	C6	28
NOVARTIS VACA VALLEY EPA ID:: CAR000234187	3333 VACA VALLEY PKW	NNE 1/8 - 1/4 (0.249 mi.)	C7	29

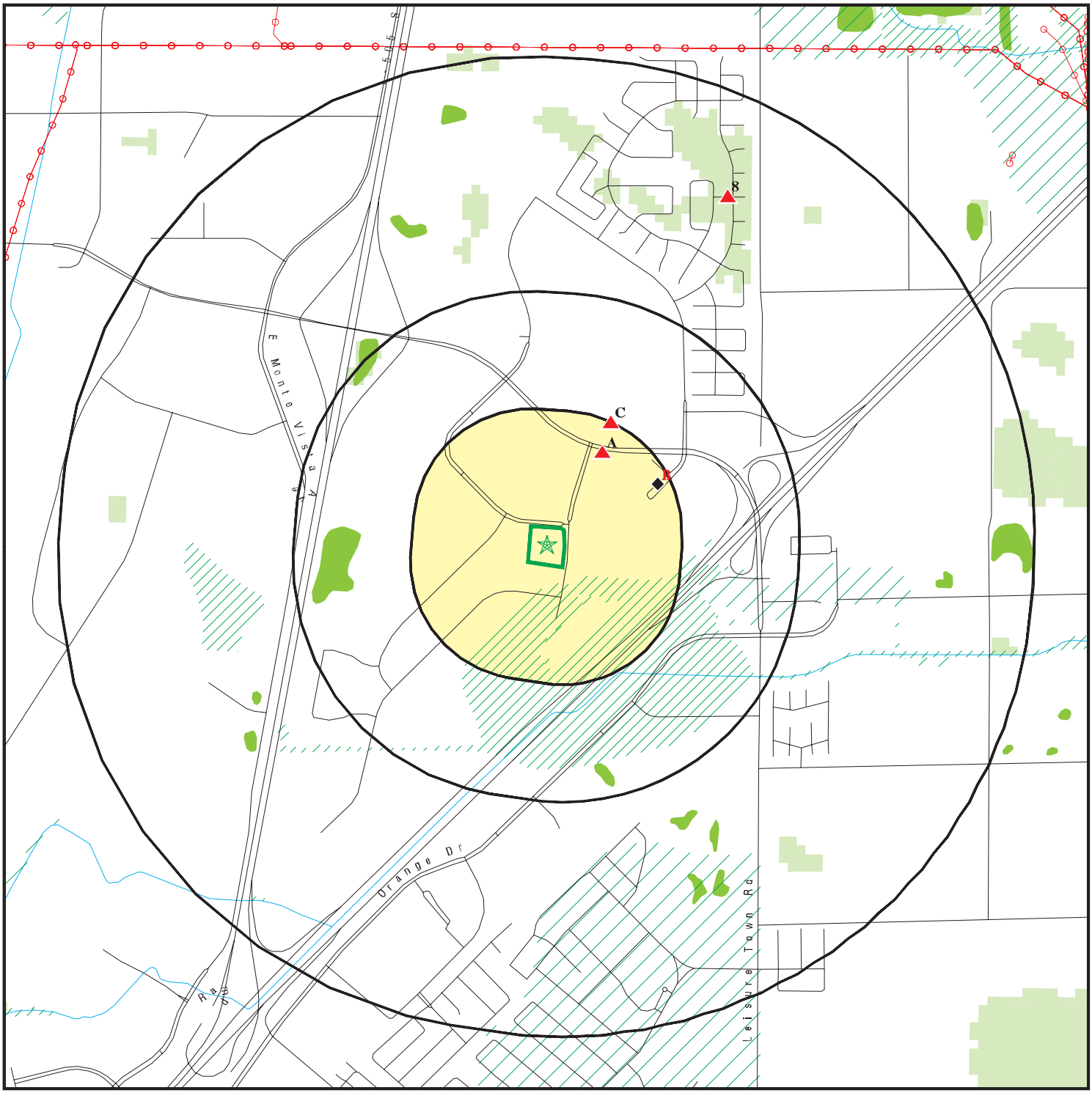
Lower Elevation	Address	Direction / Distance	Map ID	Page
KAISER FOUNDATION HO EPA ID:: CAL000372595	1 QUALITY DR	ENE 1/8 - 1/4 (0.223 mi.)	B5	27

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
MAPLEWOOD SUBDIVISION	LUST
SFPP LP ELMIRA BOOSTER STN	RCRA-SQG, CPS-SLIC

OVERVIEW MAP - 5743466.2S



0 1/4 1/2 1 Miles

- 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
- 100-year flood zone
- 500-year flood zone
- 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:	Hilton Home2Suite Prototype	CLIENT:	Achievement Engineering Corp.
ADDRESS:	3700 New Horizons Way Vacaville CA 95688	CONTACT:	Mobin Mahmoudi
LAT/LONG:	38.387279 / 121.942094	INQUIRY #:	5743466.2s
		DATE:	August 06, 2019 7:51 pm

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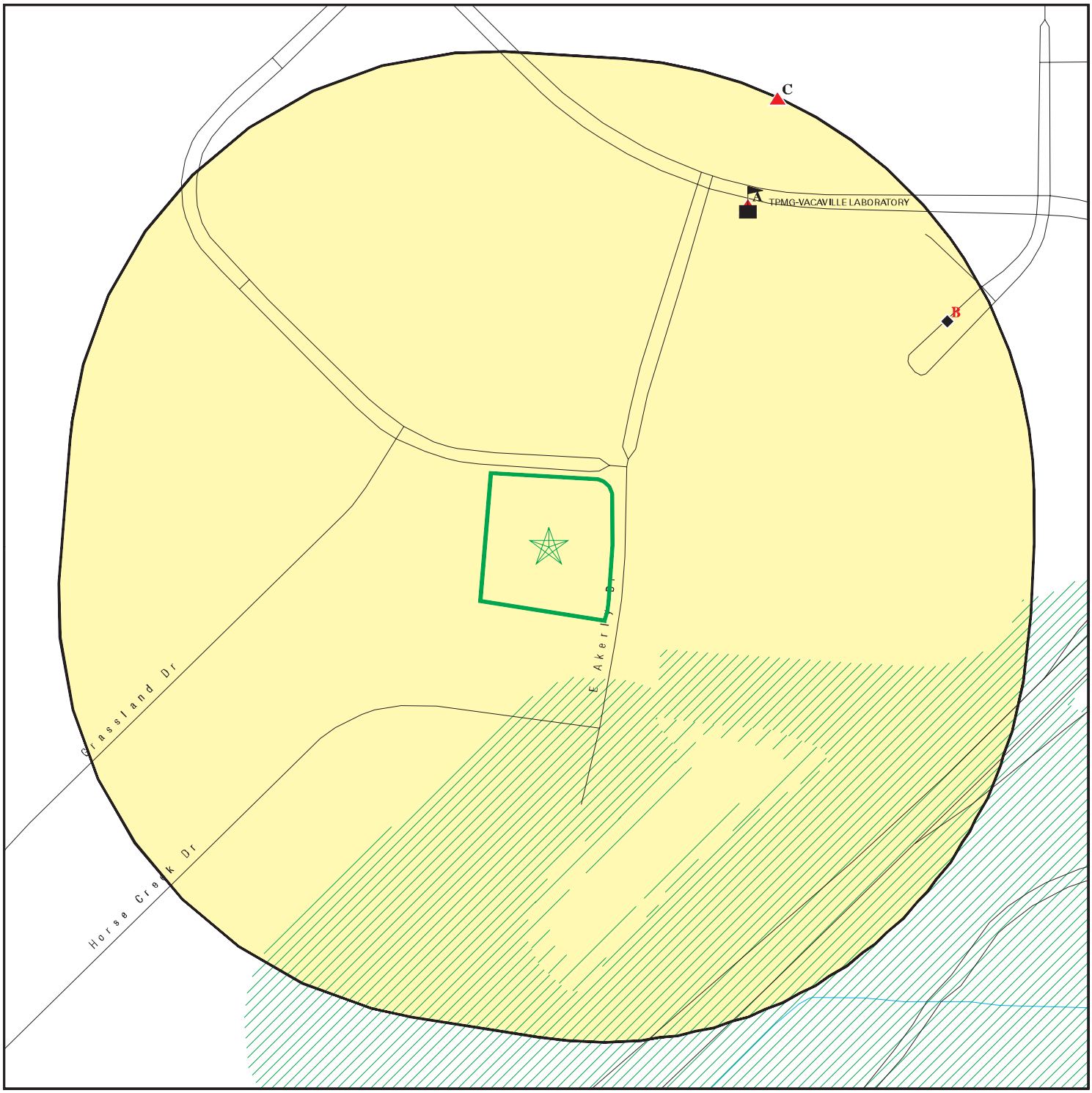
DETAIL MAP - 5743466.2S



- 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
- 100-year flood zone
- 500-year flood zone
- 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:	Hilton Home2Suite Prototype	CLIENT:	Achievement Engineering Corp.
ADDRESS:	3700 New Horizons Way Vacaville CA 95688	CONTACT:	Mobin Mahmoudi
LAT/LONG:	38.387279 / 121.942094	INQUIRY #:	5743466.2s
		DATE:	August 06, 2019 7:52 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	1	NR	NR	NR	1
RCRA-CESQG	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 CONTROL	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	2	NR	NR	NR	2
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
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	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
CERS HAZ WASTE	0.250		0	1	NR	NR	NR	1
Toxic Pits	1.000		0	0	0	0	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
CERS TANKS	0.250		0	1	NR	NR	NR	1
CA FID UST	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	3	NR	NR	NR	3
FUDS	1.000		0	0	0	0	NR	0
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
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	8	0	1	0	9

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
NNE
1/8-1/4
0.185 mi.
975 ft.

KAISER PERMANENTE
3700 VACA VALLEY PKWY
VACAVILLE, CA 95688

Site 1 of 2 in cluster A

UST **U003641524**
N/A

Relative:
Higher

Actual:
91 ft.

UST:

Name:	KAISER PERMANENTE
Address:	3700 VACA VALLEY PKWY
City,State,Zip:	VACAVILLE, CA 95688
Facility ID:	50750
Permitting Agency:	SOLANO COUNTY
Latitude:	38.3879212558486
Longitude:	-121.938578188419

A2
NNE
1/8-1/4
0.185 mi.
975 ft.

KAISER PERMANENTE
3700 VACA VALLEY PKWY
VACAVILLE, CA 94688

Site 2 of 2 in cluster A

RCRA-SQG **1001122821**
CAR000016592

Relative:
Higher

Actual:
91 ft.

RCRA-SQG:

Date form received by agency:	03/04/1999
Facility name:	KAISER PERMANENTE
Site name:	KAISER FOUNDATION HEALTH PLAN, INC
Facility address:	3700 VACA VALLEY PKWY VACAVILLE, CA 94688
EPA ID:	CAR000016592
Contact:	CATHY JOHNSON
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	707-651-3588
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PERMANENTE MEDICAL GROUP
Owner/operator address:	3700 VACAVILLE PARKWAY VACAVILLE, CA 95688
Owner/operator country:	Not reported
Owner/operator telephone:	707-453-5000
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

KAISER PERMANENTE (Continued) **1001122821**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	Yes
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	11/25/1996
Site name:	KAISER PERMANENTE
Classification:	Small Quantity Generator
Violation Status:	No violations found

B3 **KAISER FOUNDATION HOSPITAL, VACAVILLE MEDICAL CENT** **UST** **U004136818**
ENE **1 QUALITY DR** **N/A**
1/8-1/4 **VACAVILLE, CA 95688**
0.223 mi.
1176 ft. **Site 1 of 3 in cluster B**

Relative:
Lower

Actual:
90 ft.

UST:

Name:	KAISER FOUNDATION HOSPITAL, VACAVILLE MEDICAL CENTER
Address:	1 QUALITY DR
City,State,Zip:	VACAVILLE, CA 95688
Facility ID:	48-000-050750
Permitting Agency:	Solano County Environmental Health
Latitude:	38.38817
Longitude:	-121.93824

SOLANO CO. UST:

Name:	KAISER PERMANENTE
Address:	1 QUALITY DR
City,State,Zip:	VACAVILLE, CA 95688
Facility Id:	50750
Facility Status:	Active
Decode for Facility Status:	Operating
Facility Phone:	707-624-4000
Inventory Number:	1
Inventory Type:	General Underground Tank (110)
Inventory Description:	Not reported
Permit Expire/Last Service:	LETTER/REPORT REVIEW 02/28/19, 02/28/19
Last Service Date:	8/6/2018
District:	SUP-DIST NO 3031
Inspector:	Ambrose, Chris S
Name:	KAISER PERMANENTE
Address:	1 QUALITY DR
City,State,Zip:	VACAVILLE, CA 95688
Inventory Number:	2

KAISER FOUNDATION HOSPITAL, VACAVILLE MEDICAL CENTER (Continued) **U004136818**

Inventory Type: General Underground Tank (110)
Inventory Description: Not reported
Permit Expire/Last Service: ROUTINE - INITIAL (INVENTORIED) 02/28/19, 02/28/19
Last Service Date: 6/6/2018
District: SUP-DIST NO 3031
Inspector: Ambrose, Chris S

Name: KAISER PERMANENTE
Address: 1 QUALITY DR
City,State,Zip: VACAVILLE, CA 95688

Inventory Number: 3
Inventory Type: General Underground Tank (110)
Inventory Description: Not reported
Permit Expire/Last Service: ROUTINE - INITIAL (INVENTORIED) 02/28/19, 02/28/19
Last Service Date: 6/6/2018
District: SUP-DIST NO 3031
Inspector: Ambrose, Chris S

B4 **KAISER VACAVILLE HELISTOP** **CERS HAZ WASTE** **S121741945**
ENE **1 QUALITY DRIVE** **CERS TANKS** **N/A**
1/8-1/4 **VACAVILLE, CA 95688** **NPDES**
0.223 mi. **CERS**
1176 ft. **Site 2 of 3 in cluster B**

Relative: **Lower**
Actual: **90 ft.**

CERS HAZ WASTE:
Site ID: 127143
CERS ID: 10402039
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 06-09-2015
Citation: 23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Description: Failure to maintain on site an approved monitoring plan.
Violation Notes: Returned to compliance on 07/27/2015.
Violation Division: Solano County Environmental Health
Violation Program: UST
Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 06-06-2018
Citation: 23 CCR 16 2644.1(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2644.1(a)(2)
Violation Description: Failure to demonstrate to the UPA that the equipment and methods used to monitor the UST system are certified by an independent third-party as complying with the standards set forth in 23 CCR 2643(f).
Violation Notes: Returned to compliance on 06/06/2018.
Violation Division: Solano County Environmental Health
Violation Program: UST
Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 11-04-2016

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes:	Returned to compliance on 01/20/2017.
Violation Division:	Solano County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	06-06-2018
Citation:	23 CCR 16 2644.1(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2644.1(a)(2)
Violation Description:	Failure to demonstrate to the UPA that the equipment and methods used to monitor the UST system are certified by an independent third-party as complying with the standards set forth in 23 CCR 2643(f).
Violation Notes:	Returned to compliance on 06/07/2018.
Violation Division:	Solano County Environmental Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	06-09-2015
Citation:	23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Description:	Failure to submit, obtain approval, or maintain a complete/accurate response plan.
Violation Notes:	Returned to compliance on 07/27/2015.
Violation Division:	Solano County Environmental Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	11-04-2016
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit a site map with all required content.
Violation Notes:	Returned to compliance on 01/20/2017.
Violation Division:	Solano County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-07-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Solano County Environmental Health
Eval Program:	UST
Eval Source:	CERS

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-09-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-17-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: AMC performed by Belshire Environmental Services (new DO for site). No violations observed
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-04-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-06-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-24-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-04-2016

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Site Address: 1 QUALITY DR
Site City: VACAVILLE
Site Zip: 95688
Enf Action Date: 09-14-2010
Enf Action Type: Referral to District Attorney
Enf Action Description: Referral to District Attorney
Enf Action Notes: Fines/Penalties Assessed: $43,500.00. SEPs Value: $15,000.00. Referral for tampering of sensors, failure to obtain approval (Permit) from CUPA to modify UST system, failure to install/ modify the spill prevention equipment per manufacturer's specificiatons.
Enf Action Division: Solano County Environmental Health
Enf Action Program: UNSPEC
Enf Action Source: CERS

Coordinates:
Site ID: 127143
Facility Name: Kaiser Foundation Hospital, Vacaville Medical Center
Env Int Type Code: HWG
Program ID: 10402039
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 38.388170
Longitude: -121.938240

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Solano County Env Health
Entity Title: Not reported
Affiliation Address: 675 Texas Street, Suite 5500
Affiliation City: Fairfield
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94533
Affiliation Phone: (707) 784-6765

Affiliation Type Desc: UST Permit Applicant
Entity Name: PAUL LUTTRELL
Entity Title: CHIEF ENGINEER
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (707) 624-2581

Affiliation Type Desc: Document Preparer

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Entity Name: Steven Gerigk
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact
Entity Name: Steven Gerigk
Entity Title: Not reported
Affiliation Address: 1 Quality Drive
Affiliation City: Vacaville
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 95688
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Steven Gerigk
Entity Title: Safety Operations Leader
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner
Entity Name: Kaiser Foundation Hospital
Entity Title: Not reported
Affiliation Address: 1 Quality Drive
Affiliation City: Vacaville
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 95688
Affiliation Phone: (707) 624-4000

Affiliation Type Desc: UST Property Owner Name
Entity Name: KAISER FOUNDATION HOSPITALS
Entity Title: Not reported
Affiliation Address: ONE KAISER PLAZA
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94612
Affiliation Phone: (510) 271-5800

Affiliation Type Desc: UST Tank Owner
Entity Name: Kaiser Foundation Hospitals
Entity Title: Not reported
Affiliation Address: ONE KAISER PLAZA
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 946I2

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation Phone: (510) 271-5800

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 1 Quality Drive
Affiliation City: Vacaville
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 95688
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Kaiser Permanente - Vacaville Medical Center
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (707) 624-4000

Affiliation Type Desc: Parent Corporation
Entity Name: Kaiser Foundation Hospital, Vacaville Medical Center
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: UST Tank Operator
Entity Name: VACAVILLE MEDICAL CENTER - ATTN: Paul Luttrell
Entity Title: Not reported
Affiliation Address: 1 QUALITY DRIVE
Affiliation City: VACAVILLE
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 95688
Affiliation Phone: (707) 624-2581

CERS TANKS:
Name: KAISER FOUNDATION HOSPITAL, VACAVILLE MEDICAL CENTER
Address: 1 QUALITY DR
City,State,Zip: VACAVILLE, CA 95688
Site ID: 127143
CERS ID: 10402039
CERS Description: Underground Storage Tank

Violations:
Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 06-09-2015
Citation: 23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Violation Description:	Failure to maintain on site an approved monitoring plan.
Violation Notes:	Returned to compliance on 07/27/2015.
Violation Division:	Solano County Environmental Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	06-06-2018
Citation:	23 CCR 16 2644.1(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2644.1(a)(2)
Violation Description:	Failure to demonstrate to the UPA that the equipment and methods used to monitor the UST system are certified by an independent third-party as complying with the standards set forth in 23 CCR 2643(f).
Violation Notes:	Returned to compliance on 06/06/2018.
Violation Division:	Solano County Environmental Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	11-04-2016
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes:	Returned to compliance on 01/20/2017.
Violation Division:	Solano County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	06-06-2018
Citation:	23 CCR 16 2644.1(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2644.1(a)(2)
Violation Description:	Failure to demonstrate to the UPA that the equipment and methods used to monitor the UST system are certified by an independent third-party as complying with the standards set forth in 23 CCR 2643(f).
Violation Notes:	Returned to compliance on 06/07/2018.
Violation Division:	Solano County Environmental Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	06-09-2015
Citation:	23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Description:	Failure to submit, obtain approval, or maintain a complete/accurate response plan.
Violation Notes:	Returned to compliance on 07/27/2015.
Violation Division:	Solano County Environmental Health
Violation Program:	UST
Violation Source:	CERS

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 11-04-2016
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Notes: Returned to compliance on 01/20/2017.
Violation Division: Solano County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-09-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-17-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: AMC performed by Belshire Environmental Services (new DO for site). No violations observed
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-04-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-06-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-24-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-04-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Site Address: 1 QUALITY DR
Site City: VACAVILLE
Site Zip: 95688
Enf Action Date: 09-14-2010
Enf Action Type: Referral to District Attorney
Enf Action Description: Referral to District Attorney
Enf Action Notes: Fines/Penalties Assessed: $43,500.00. SEPs Value: $15,000.00. Referral for tampering of sensors, failure to obtain approval (Permit) from CUPA to modify UST system, failure to install/ modify the spill prevention equipment per manufacturer’s specificiatons.
Enf Action Division: Solano County Environmental Health
Enf Action Program: UNSPEC
Enf Action Source: CERS

Coordinates:
Site ID: 127143
Facility Name: Kaiser Foundation Hospital, Vacaville Medical Center
Env Int Type Code: HWG
Program ID: 10402039
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 38.388170
Longitude: -121.938240

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	Solano County Env Health
Entity Title:	Not reported
Affiliation Address:	675 Texas Street, Suite 5500
Affiliation City:	Fairfield
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94533
Affiliation Phone:	(707) 784-6765

Affiliation Type Desc:	UST Permit Applicant
Entity Name:	PAUL LUTTRELL
Entity Title:	CHIEF ENGINEER
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(707) 624-2581

Affiliation Type Desc:	Document Preparer
Entity Name:	Steven Gerigk
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Environmental Contact
Entity Name:	Steven Gerigk
Entity Title:	Not reported
Affiliation Address:	1 Quality Drive
Affiliation City:	Vacaville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95688
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Steven Gerigk
Entity Title:	Safety Operations Leader
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	Kaiser Foundation Hospital
Entity Title:	Not reported
Affiliation Address:	1 Quality Drive
Affiliation City:	Vacaville
Affiliation State:	CA

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation Country:	United States
Affiliation Zip:	95688
Affiliation Phone:	(707) 624-4000
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	KAISER FOUNDATION HOSPITALS
Entity Title:	Not reported
Affiliation Address:	ONE KAISER PLAZA
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94612
Affiliation Phone:	(510) 271-5800
Affiliation Type Desc:	UST Tank Owner
Entity Name:	Kaiser Foundation Hospitals
Entity Title:	Not reported
Affiliation Address:	ONE KAISER PLAZA
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	946I2
Affiliation Phone:	(510) 271-5800
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1 Quality Drive
Affiliation City:	Vacaville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95688
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	Kaiser Permanente - Vacaville Medical Center
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(707) 624-4000
Affiliation Type Desc:	Parent Corporation
Entity Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Tank Operator
Entity Name:	VACAVILLE MEDICAL CENTER - ATTN: Paul Luttrell
Entity Title:	Not reported

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation Address:	1 QUALITY DRIVE
Affiliation City:	VACAVILLE
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95688
Affiliation Phone:	(707) 624-2581

NPDES:

Name:	KAISER VACAVILLE HELISTOP
Address:	1 QUALITY DRIVE
City,State,Zip:	VACAVILLE, CA 95688
Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	5S48W000927
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Expired
Status Date:	10/31/2012
Operator Name:	Kaiser Permanente
Operator Address:	1 Quality Drive
Operator City:	Vacaville
Operator State:	California
Operator Zip:	95688

CERS:

Name:	KAISER FOUNDATION HOSPITAL, VACAVILLE MEDICAL CENTER
Address:	1 QUALITY DR
City,State,Zip:	VACAVILLE, CA 95688
Site ID:	127143
CERS ID:	10402039
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	127143
Site Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date:	06-09-2015
Citation:	23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Description:	Failure to maintain on site an approved monitoring plan.
Violation Notes:	Returned to compliance on 07/27/2015.
Violation Division:	Solano County Environmental Health
Violation Program:	UST

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 06-06-2018
Citation: 23 CCR 16 2644.1(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2644.1(a)(2)
Violation Description: Failure to demonstrate to the UPA that the equipment and methods used to monitor the UST system are certified by an independent third-party as complying with the standards set forth in 23 CCR 2643(f).
Violation Notes: Returned to compliance on 06/06/2018.
Violation Division: Solano County Environmental Health
Violation Program: UST
Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 11-04-2016
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes: Returned to compliance on 01/20/2017.
Violation Division: Solano County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 06-06-2018
Citation: 23 CCR 16 2644.1(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2644.1(a)(2)
Violation Description: Failure to demonstrate to the UPA that the equipment and methods used to monitor the UST system are certified by an independent third-party as complying with the standards set forth in 23 CCR 2643(f).
Violation Notes: Returned to compliance on 06/07/2018.
Violation Division: Solano County Environmental Health
Violation Program: UST
Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 06-09-2015
Citation: 23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Description: Failure to submit, obtain approval, or maintain a complete/accurate response plan.
Violation Notes: Returned to compliance on 07/27/2015.
Violation Division: Solano County Environmental Health
Violation Program: UST
Violation Source: CERS

Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Violation Date: 11-04-2016
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Notes: Returned to compliance on 01/20/2017.
Violation Division: Solano County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-09-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-17-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: AMC performed by Belshire Environmental Services (new DO for site). No violations observed
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-04-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-06-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2017

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-24-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-04-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Solano County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 127143
Site Name: Kaiser Foundation Hospital, Vacaville Medical Center
Site Address: 1 QUALITY DR
Site City: VACAVILLE
Site Zip: 95688
Enf Action Date: 09-14-2010
Enf Action Type: Referral to District Attorney
Enf Action Description: Referral to District Attorney
Enf Action Notes: Fines/Penalties Assessed: $43,500.00. SEPs Value: $15,000.00. Referral for tampering of sensors, failure to obtain approval (Permit) from CUPA to modify UST system, failure to install/ modify the spill prevention equipment per manufacturer’s specificiatons.
Enf Action Division: Solano County Environmental Health
Enf Action Program: UNSPEC
Enf Action Source: CERS

Coordinates:
Site ID: 127143
Facility Name: Kaiser Foundation Hospital, Vacaville Medical Center
Env Int Type Code: HWG
Program ID: 10402039
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 38.388170
Longitude: -121.938240

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Solano County Env Health
Entity Title: Not reported

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation Address:	675 Texas Street, Suite 5500
Affiliation City:	Fairfield
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94533
Affiliation Phone:	(707) 784-6765
Affiliation Type Desc:	UST Permit Applicant
Entity Name:	PAUL LUTTRELL
Entity Title:	CHIEF ENGINEER
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(707) 624-2581
Affiliation Type Desc:	Document Preparer
Entity Name:	Steven Gerigk
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	Steven Gerigk
Entity Title:	Not reported
Affiliation Address:	1 Quality Drive
Affiliation City:	Vacaville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95688
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	Steven Gerigk
Entity Title:	Safety Operations Leader
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	Kaiser Foundation Hospital
Entity Title:	Not reported
Affiliation Address:	1 Quality Drive
Affiliation City:	Vacaville
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95688
Affiliation Phone:	(707) 624-4000

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation Type Desc:	UST Property Owner Name
Entity Name:	KAISER FOUNDATION HOSPITALS
Entity Title:	Not reported
Affiliation Address:	ONE KAISER PLAZA
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94612
Affiliation Phone:	(510) 271-5800

Affiliation Type Desc:	UST Tank Owner
Entity Name:	Kaiser Foundation Hospitals
Entity Title:	Not reported
Affiliation Address:	ONE KAISER PLAZA
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	946I2
Affiliation Phone:	(510) 271-5800

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1 Quality Drive
Affiliation City:	Vacaville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95688
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	Kaiser Permanente - Vacaville Medical Center
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(707) 624-4000

Affiliation Type Desc:	Parent Corporation
Entity Name:	Kaiser Foundation Hospital, Vacaville Medical Center
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	UST Tank Operator
Entity Name:	VACAVILLE MEDICAL CENTER - ATTN: Paul Luttrell
Entity Title:	Not reported
Affiliation Address:	1 QUALITY DRIVE
Affiliation City:	VACAVILLE
Affiliation State:	CA
Affiliation Country:	United States

KAISER VACAVILLE HELISTOP (Continued) **S121741945**

Affiliation Zip: 95688
Affiliation Phone: (707) 624-2581

B5 **KAISER FOUNDATION HOSPITALS** **RCRA NonGen / NLR** **1024833386**
ENE **1 QUALITY DR** **CAL000372595**
1/8-1/4 **VACAVILLE, CA 95688**
0.223 mi.
1176 ft. **Site 3 of 3 in cluster B**

Relative: **Lower**

Actual: **90 ft.**

RCRA NonGen / NLR:
Date form received by agency: 03/12/2012
Facility name: KAISER FOUNDATION HOSPITALS
Facility address: 1 QUALITY DR
VACAVILLE, CA 95688
EPA ID: CAL000372595
Mailing address: 1800 HARRISON ST
OAKLAND, CA 94612-5103
Contact: MATTHEW HURAY
Contact address: 1800 HARRISON ST
OAKLAND, CA 94612
Contact country: Not reported
Contact telephone: 301-625-7462
Contact email: MATTHEW.J.HURAY@KP.ORG
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: MATTHEW HURAY
Owner/operator address: 1800 HARRISON ST
OAKLAND, CA 94612
Owner/operator country: Not reported
Owner/operator telephone: 301-625-7462
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KAISER PERMANENTE
Owner/operator address: ONE KAISER PLAZA
OAKLAND, CA 94612
Owner/operator country: Not reported
Owner/operator telephone: 510-625-4737
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No

KAISER FOUNDATION HOSPITALS (Continued) **1024833386**

Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

C6 **NOVICI BIOTECH LLC** **RCRA NonGen / NLR** **1024818136**
NNE **3333 VACA VALLEY PKWY** **CAL000324397**
1/8-1/4 **VACAVILLE, CA 95688**
0.249 mi.
1317 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
92 ft.

RCRA NonGen / NLR:

Date form received by agency:	08/31/2007
Facility name:	NOVICI BIOTECH LLC
Facility address:	3333 VACA VALLEY PKWY VACAVILLE, CA 95688-9421
EPA ID:	CAL000324397
Mailing address:	3333 VACA VALLEY PKWY STE 400 VACAVILLE, CA 95688-9421
Contact:	HAL PADGETT
Contact address:	3333 VACA VALLEY PKWY SUITE 400 VACAVILLE, CA 95688
Contact country:	Not reported
Contact telephone:	707-592-1866
Contact email:	HAL.PADGETT@NOVICIBIOTECH.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	HAL PADGETT
Owner/operator address:	3333 VACA VALLEY PKWY SUITE 400 VACAVILLE, CA 95688
Owner/operator country:	Not reported
Owner/operator telephone:	707-592-1866
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOVICI BIOTECH LLC
Owner/operator address:	3333 VACA VALLEY PKWY SUITE 400 VACAVILLE, CA 95688

NOVICI BIOTECH LLC (Continued) **1024818136**

Owner/operator country: Not reported
Owner/operator telephone: 707-592-1866
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

C7 **NOVARTIS VACA VALLEY PKWY MS AND T SITE** **RCRA NonGen / NLR** **1015753085**
NNE **3333 VACA VALLEY PKWY** **CAR000234187**
1/8-1/4 **VACAVILLE, CA 95688**
0.249 mi.
1317 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
92 ft.

RCRA NonGen / NLR:
Date form received by agency: 09/26/2014
Facility name: NOVARTIS VACA VALLEY PKWY MS AND T SITE
Facility address: 3333 VACA VALLEY PKWY
STE 1000
VACAVILLE, CA 95688
EPA ID: CAR000234187
Mailing address: 2010 CESSNA DR
VACAVILLE, CA 95688
Contact: KEITH ZUCCA
Contact address: 2010 CESSNA DR
VACAVILLE, CA 95688
Contact country: US
Contact telephone: 707-514-5436
Contact email: KEITH.ZUCCA@NOVARTIS.COM
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: DAVID SERP
Owner/operator address: Not reported
Not reported

NOVARTIS VACA VALLEY PKWY MS AND T SITE (Continued) **1015753085**

Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 08/01/2009
Owner/Op end date: Not reported

Owner/operator name: NOVARTIS PHARMACEUTICAL
Owner/operator address: ONE HEALTH PLAZA
EAST HANOVER, NJ 07936
Owner/operator country: US
Owner/operator telephone: 862-778-8300
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/19/2008
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/17/2013
Site name: NOVARTIS VACA VALLEY PKWY MS AND T SITE
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 135
. Waste name: Unspecified aqueous solution

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

NOVARTIS VACA VALLEY PKWY MS AND T SITE (Continued) **1015753085**

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 791
. Waste name: Liquids with pH < 2

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: P105
. Waste name: SODIUM AZIDE

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

NOVARTIS VACA VALLEY PKWY MS AND T SITE (Continued) **1015753085**

. Waste code: U080
. Waste name: METHANE, DICHLORO- (OR) METHYLENE CHLORIDE

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

Violation Status: No violations found

---

8 **NORTH VILLAGE ELEMENTARY** **ENVIROSTOR** **S118756979**
NNE **VACA VALLEY PARKWAY/LEISURE TOWN ROAD** **SCH** **N/A**
1/2-1 **VACAVILLE, CA 95688**
0.791 mi.
4179 ft.

Relative:
Higher

Actual:
93 ft.

ENVIROSTOR:
Name: NORTH VILLAGE ELEMENTARY
Address: VACA VALLEY PARKWAY/LEISURE TOWN ROAD
City,State,Zip: VACAVILLE, CA 95688
Facility ID: 48020003
Status: No Action Required
Status Date: 06/13/2002
Site Code: 104272
Site Type: School Investigation
Site Type Detailed: School
Acres: 11
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: Northern California Schools & Santa Susana
Assembly: 11
Senate: 03
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 38.3981
Longitude: -121.935
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - LIVESTOCK
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: NORTH VILLAGE ELEMENTARY
Alias Type: Alternate Name
Alias Name: VACAVILLE USD
Alias Type: Alternate Name
Alias Name: VACAVILLE USD-NORTH VILLAGE ELEMENTARY
Alias Type: Alternate Name
Alias Name: 104272
Alias Type: Project Code (Site Code)
Alias Name: 48020003
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)

NORTH VILLAGE ELEMENTARY (Continued) **S118756979**

Completed Date:	06/12/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	07/29/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	06/13/2002
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

SCH:

Name:	NORTH VILLAGE ELEMENTARY
Address:	VACA VALLEY PARKWAY/LEISURE TOWN ROAD
City,State,Zip:	VACAVILLE, CA 95688
Facility ID:	48020003
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	11
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	Northern California Schools & Santa Susana
Site Code:	104272
Assembly:	11
Senate:	03
Special Program Status:	Not reported
Status:	No Action Required
Status Date:	06/13/2002
Restricted Use:	NO
Funding:	School District
Latitude:	38.3981
Longitude:	-121.935
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - LIVESTOCK
Potential COC:	NONE SPECIFIED, No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA

NORTH VILLAGE ELEMENTARY (Continued) **S118756979**

Alias Name:	NORTH VILLAGE ELEMENTARY
Alias Type:	Alternate Name
Alias Name:	VACAVILLE USD
Alias Type:	Alternate Name
Alias Name:	VACAVILLE USD-NORTH VILLAGE ELEMENTARY
Alias Type:	Alternate Name
Alias Name:	104272
Alias Type:	Project Code (Site Code)
Alias Name:	48020003
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	06/12/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	07/29/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	06/13/2002
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

Count: 2 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
VACAVILLE	1001217683	SFPP LP ELMIRA BOOSTER STN	LEISURE TOWN RD AND S P R R T	95688	RCRA-SQG, CPS-SLIC
VACAVILLE	S107261691	MAPLEWOOD SUBDIVISION	LEISURE TOWN RD	95687	LUST

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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 07/02/2019
Next Scheduled EDR Contact: 10/14/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 07/02/2019
Next Scheduled EDR Contact: 10/14/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 07/02/2019
Next Scheduled EDR Contact: 10/14/2019
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: 07/03/2019
Next Scheduled EDR Contact: 10/14/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/02/2019
Next Scheduled EDR Contact: 10/28/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/02/2019
Next Scheduled EDR Contact: 10/28/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - 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). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 02/22/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 41

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/10/2019
Next Scheduled EDR Contact: 08/26/2019
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: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

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: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2019
Next Scheduled EDR Contact: 09/09/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 36

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/30/2019
Next Scheduled EDR Contact: 08/12/2019
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: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/30/2019
Next Scheduled EDR Contact: 08/12/2019
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: 05/13/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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

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 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 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 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 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: 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: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Quarterly

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 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 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

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/10/2018
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 02/19/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 11/01/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 09/24/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 50
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/13/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/12/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/10/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 06/10/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/12/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 42

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Semi-Annually

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: 06/17/2019
Next Scheduled EDR Contact: 09/30/2019
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: 10/03/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/17/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/10/2018
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
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: 09/24/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 50

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
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: 10/12/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 11/01/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 11/07/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/24/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/30/2019
Next Scheduled EDR Contact: 08/12/2019
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: 06/20/2019
Next Scheduled EDR Contact: 10/07/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 34

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
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: 12/17/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/30/2019
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: 04/25/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 48

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/12/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/09/2019
Next Scheduled EDR Contact: 08/26/2019
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: 04/26/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

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: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: No Update Planned

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

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: 04/23/2019
Next Scheduled EDR Contact: 08/12/2019
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: 02/24/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 50

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
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: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/30/2019
Next Scheduled EDR Contact: 08/12/2019
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: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
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: 04/09/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 05/08/2019
Number of Days to Update: 27

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
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: 02/24/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 50

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
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: 06/28/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 26

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 09/23/2019
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: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
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: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 05/02/2019
Next Scheduled EDR Contact: 08/19/2019
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: 04/09/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 05/08/2019
Number of Days to Update: 27

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
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: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 32

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/02/2019
Next Scheduled EDR Contact: 10/14/2019
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: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/16/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 49

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 10/24/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 40

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 06/24/2019
Next Scheduled EDR Contact: 08/05/2019
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: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 03/07/2019
Date Data Arrived at EDR: 04/03/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 50

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/21/2019
Next Scheduled EDR Contact: 09/02/2019
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: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
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: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/10/2019
Next Scheduled EDR Contact: 10/21/2019
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: 05/13/2019
Next Scheduled EDR Contact: 08/26/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/07/2019
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 05/06/2019
Next Scheduled EDR Contact: 08/19/2019
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: 05/10/2019
Next Scheduled EDR Contact: 08/19/2019
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: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/18/2019
Next Scheduled EDR Contact: 09/30/2019
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: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/02/2019
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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/24/2019
Next Scheduled EDR Contact: 08/05/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 07/01/2019
Next Scheduled EDR Contact: 09/16/2019
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: 04/25/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 07/01/2019
Next Scheduled EDR Contact: 08/19/2019
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: 03/20/2019
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/21/2019
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: 07/03/2019
Next Scheduled EDR Contact: 10/21/2019
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: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/07/2019
Next Scheduled EDR Contact: 09/16/2019
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: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/07/2019
Next Scheduled EDR Contact: 09/16/2019
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: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
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: 04/02/2019
Date Data Arrived at EDR: 04/02/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/01/2019
Next Scheduled EDR Contact: 10/14/2019
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: 12/03/2018
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 51

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/30/2019
Next Scheduled EDR Contact: 08/12/2019
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: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 30

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
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: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
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: 07/10/2019
Next Scheduled EDR Contact: 10/21/2019
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: 05/02/2019
Next Scheduled EDR Contact: 08/19/2019
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: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 07/01/2019
Next Scheduled EDR Contact: 10/14/2019
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: 11/27/2018
Date Data Arrived at EDR: 02/27/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/29/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Semi-Annually

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: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/31/2019
Next Scheduled EDR Contact: 09/09/2019
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: 05/31/2019
Next Scheduled EDR Contact: 09/09/2019
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: 03/27/2019
Date Data Arrived at EDR: 03/28/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 34

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/19/2019
Next Scheduled EDR Contact: 09/23/2019
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: 02/15/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 10

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/05/2019
Next Scheduled EDR Contact: 09/16/2019
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: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/07/2019
Date Data Arrived at EDR: 04/09/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Quarterly

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: 02/19/2019
Date Data Arrived at EDR: 02/21/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 39

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/21/2019
Next Scheduled EDR Contact: 09/02/2019
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: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 36

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 04/18/2019
Date Data Arrived at EDR: 04/19/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 11

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 08/19/2019
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: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
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: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
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: 03/01/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
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: 03/19/2019
Date Data Arrived at EDR: 03/22/2019
Date Made Active in Reports: 04/09/2019
Number of Days to Update: 18

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 05/23/2019
Next Scheduled EDR Contact: 09/09/2019
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: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/24/2019
Next Scheduled EDR Contact: 09/30/2019
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: 11/01/2018
Date Data Arrived at EDR: 11/02/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 07/18/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 05/15/2019
Date Data Arrived at EDR: 05/16/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 63

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/09/2019
Next Scheduled EDR Contact: 08/26/2019
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: 12/31/2017
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 54

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 05/21/2019
Next Scheduled EDR Contact: 09/02/2019
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: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/21/2019
Next Scheduled EDR Contact: 09/02/2019
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: 04/08/2019
Date Data Arrived at EDR: 04/09/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
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: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 02/20/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
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: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/05/2019
Number of Days to Update: 31
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 47
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/12/2019
Next Scheduled EDR Contact: 09/23/2019
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: 03/18/2019
Date Data Arrived at EDR: 03/19/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 41
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/17/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/21/2019
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: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
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: 06/19/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 47

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/12/2019
Next Scheduled EDR Contact: 09/23/2019
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: 03/05/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/16/2019
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: 04/09/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 05/08/2019
Number of Days to Update: 27

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/11/2019
Next Scheduled EDR Contact: 09/23/2019
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: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/10/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 70

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 26

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/17/2019
Next Scheduled EDR Contact: 09/16/2019
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: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 27

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/24/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/17/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 08/19/2019
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: 05/22/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 05/01/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 29

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 04/25/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 06/05/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 47

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
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: 04/10/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 19

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
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: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/20/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 63

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 07/16/2019
Number of Days to Update: 70

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/02/2019
Next Scheduled EDR Contact: 08/19/2019
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: 05/16/2019
Date Data Arrived at EDR: 05/17/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 13

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 05/30/2019
Date Data Arrived at EDR: 05/31/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 53

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2019
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 06/17/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/16/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 63

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/15/2019
Date Data Arrived at EDR: 04/16/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 66

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/17/2019
Next Scheduled EDR Contact: 10/28/2019
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: 07/12/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

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: 01/01/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 54

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
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: 07/19/2019
Next Scheduled EDR Contact: 10/28/2019
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: 01/01/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 54

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
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: 01/01/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 54

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
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: 04/08/2019
Date Data Arrived at EDR: 04/16/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 66

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/17/2019
Next Scheduled EDR Contact: 10/28/2019
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: 07/12/2019
Next Scheduled EDR Contact: 10/28/2019
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: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/04/2019
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 Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 02/20/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 13

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
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: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/29/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 53

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 05/23/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 53

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/23/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 02/05/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 10/14/2019
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: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
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: 02/21/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 9

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/13/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/09/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/09/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 04/02/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 07/16/2019
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/07/2019
Next Scheduled EDR Contact: 08/19/2019
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: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/12/2019
Number of Days to Update: 42

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 06/17/2019
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: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/11/2019
Date Data Arrived at EDR: 04/12/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 18

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/17/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/12/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 69

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/17/2019
Next Scheduled EDR Contact: 09/30/2019
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: 02/05/2019
Date Data Arrived at EDR: 04/02/2019
Date Made Active in Reports: 06/18/2019
Number of Days to Update: 77

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 10/14/2019
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: 02/06/2019
Date Data Arrived at EDR: 04/02/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 79

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 48

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 07/16/2019
Next Scheduled EDR Contact: 08/19/2019
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: 05/31/2019
Date Data Arrived at EDR: 05/31/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 52

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/06/2019
Next Scheduled EDR Contact: 08/19/2019
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: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/16/2019
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: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 04/24/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 63
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
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: 05/02/2019
Next Scheduled EDR Contact: 08/19/2019
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: 11/05/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/02/2019
Next Scheduled EDR Contact: 08/19/2019
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: 06/17/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
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: 03/04/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 47

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/12/2019
Next Scheduled EDR Contact: 09/23/2019
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: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
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: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/16/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 56

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
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: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/19/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 60
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 08/19/2019
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: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
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: 05/16/2019
Next Scheduled EDR Contact: 09/02/2019
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: 03/05/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 53
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
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: 07/23/2019
Number of Days to Update: 47
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 06/18/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 29

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/19/2019
Next Scheduled EDR Contact: 10/07/2019
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: 04/03/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 19

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/19/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 49

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/16/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/28/2019
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 05/09/2019
Date Data Arrived at EDR: 05/10/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 68

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 05/06/2019
Next Scheduled EDR Contact: 08/19/2019
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: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
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: 03/26/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 63

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
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: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
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: 05/09/2019
Next Scheduled EDR Contact: 08/26/2019
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: 03/26/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 35
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
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: 06/10/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 42
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/12/2019
Next Scheduled EDR Contact: 09/23/2019
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: 03/29/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 76
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/03/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 07/16/2019
Number of Days to Update: 70
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 04/25/2019
Next Scheduled EDR Contact: 08/12/2019
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: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/04/2019
Number of Days to Update: 20
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
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: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
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: 05/01/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 51

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/01/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/17/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
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 PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

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

HILTON HOME2SUITE PROTOTYPE
3700 NEW HORIZONS WAY
VACAVILLE, CA 95688

TARGET PROPERTY COORDINATES

Latitude (North):	38.387279 - 38° 23' 14.20''
Longitude (West):	121.942094 - 121° 56' 31.54''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	592394.3
UTM Y (Meters):	4249109.0
Elevation:	91 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5629044 ALLENDALE, CA
Version Date:	2012
South Map:	5619708 ELMIRA, 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).

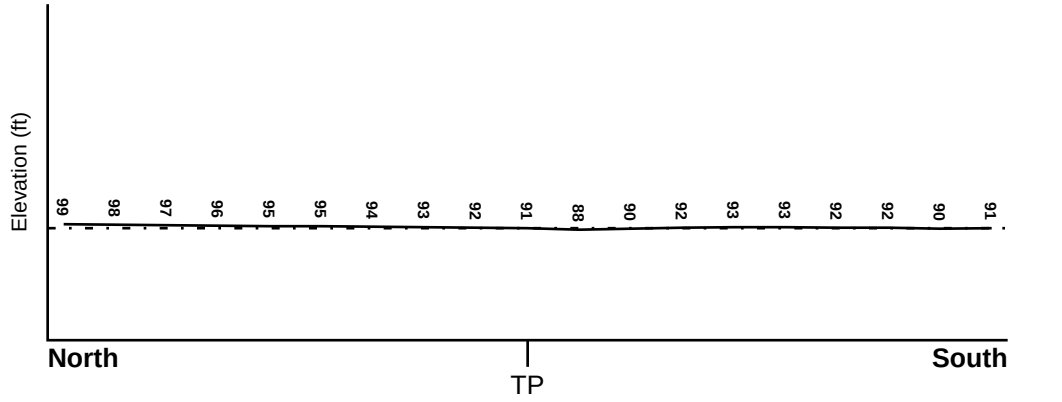
TOPOGRAPHIC INFORMATION

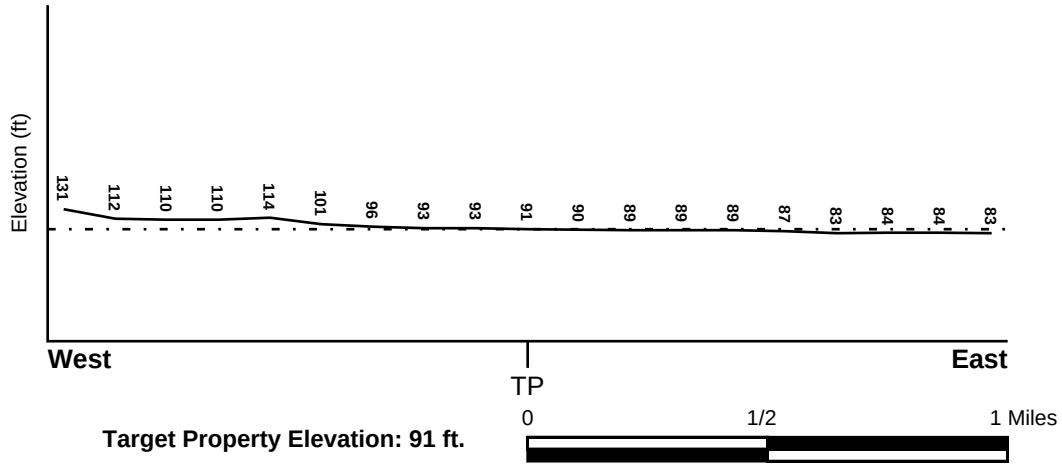
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ESE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 91 ft.

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
06095C0164E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06095C0168E	FEMA FIRM Flood data
06095C0277E	FEMA FIRM Flood data
06095C0281E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ALLENDALE	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
15	1/2 - 1 Mile NNW	SW
1G	1/2 - 1 Mile NNW	SW

For additional site information, refer to Physical Setting Source Map Findings.

* ©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

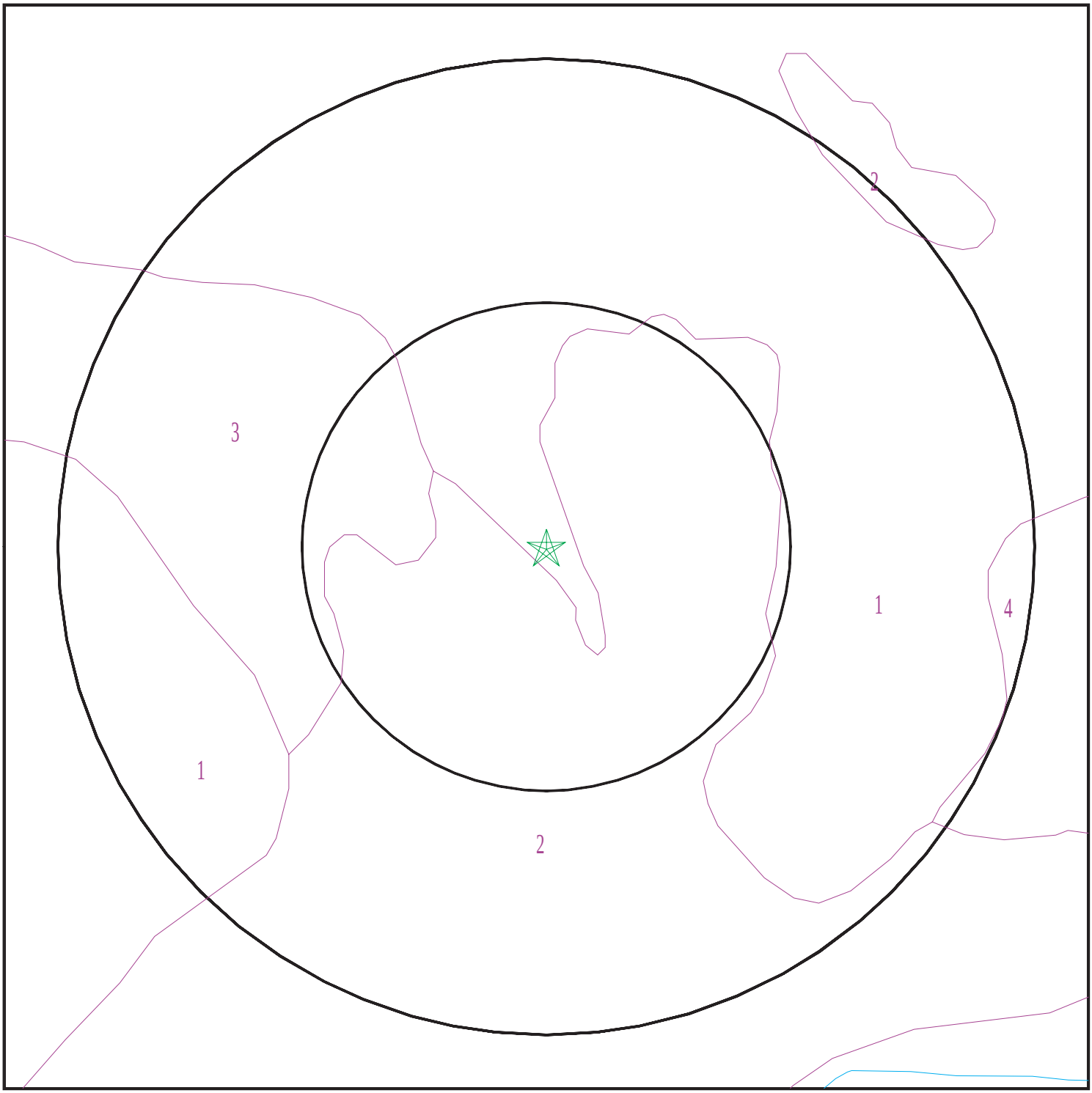
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

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 - 5743466.2s



SITE NAME:	Hilton Home2Suite Prototype	CLIENT:	Achievement Engineering Corp.
ADDRESS:	3700 New Horizons Way Vacaville CA 95688	CONTACT:	Mobin Mahmoudi
LAT/LONG:	38.387279 / 121.942094	INQUIRY #:	5743466.2s
		DATE:	August 06, 2019 7:53 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: San Ysidro

Soil Surface Texture: sandy loam

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: Moderately well 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	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
2	14 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
3	27 inches	53 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
4	53 inches	68 inches	stratified sandy loam to clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

Soil Map ID: 2

Soil Component Name: Clear Lake

Soil Surface Texture: 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: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 138 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	44 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: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
2	44 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: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: Rincon

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	22 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 7.8 Min: 6.1
2	22 inches	44 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 7.8 Min: 6.1
3	44 inches	59 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 7.8 Min: 6.1

Soil Map ID: 4

Soil Component Name: Capay

Soil Surface Texture: 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: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	31 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
2	31 inches	50 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
3	50 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

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
11	USGS40000188088	1/2 - 1 Mile NE
12	USGS40000188047	1/2 - 1 Mile SE
13	USGS40000188102	1/2 - 1 Mile NNE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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

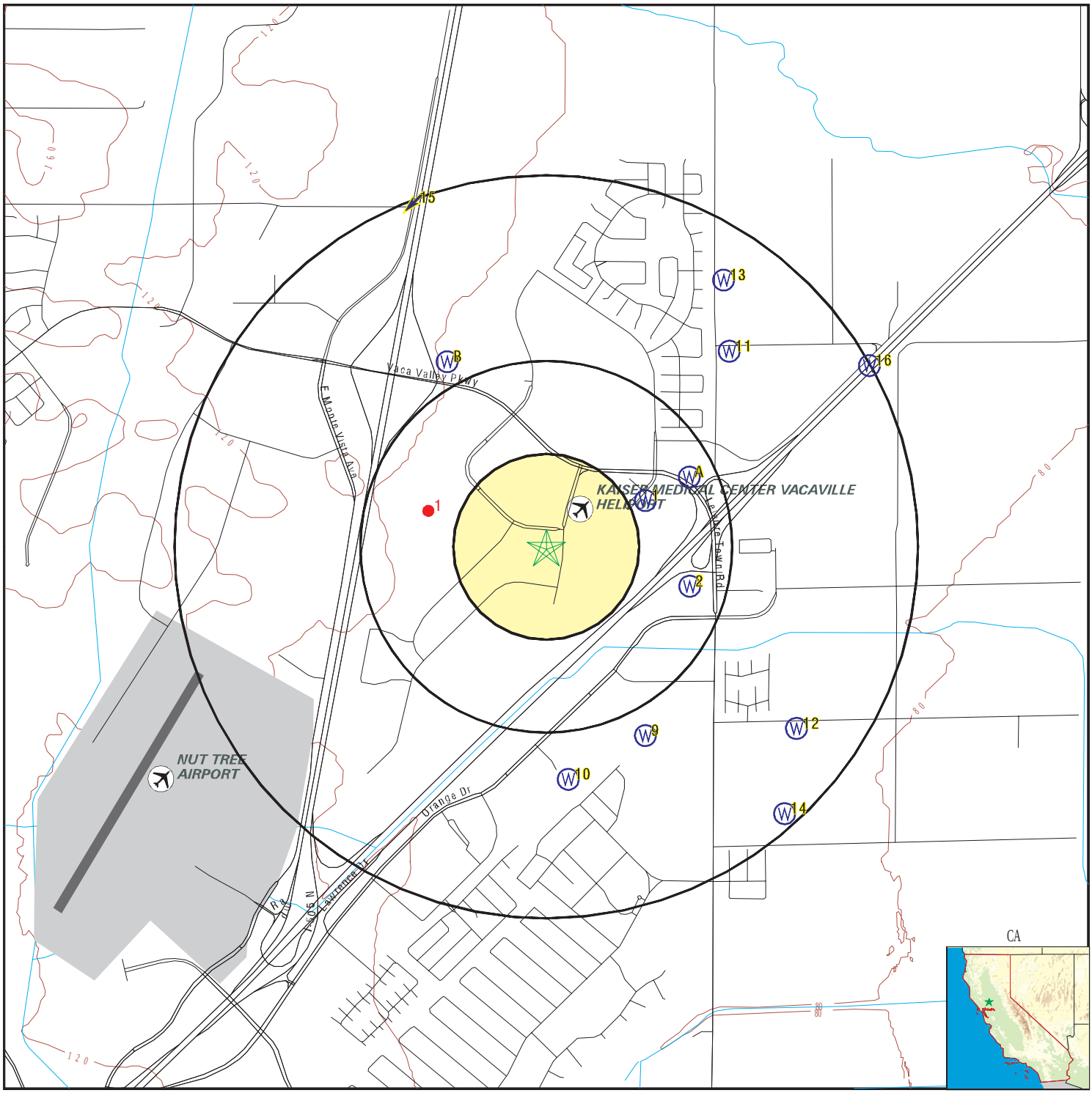
MAP ID	WELL ID	LOCATION FROM TP
1	20363	1/4 - 1/2 Mile ENE
2	20352	1/4 - 1/2 Mile ESE
A3	CADWR8000037846	1/4 - 1/2 Mile ENE
A4	CADWR8000037847	1/4 - 1/2 Mile ENE
A5	CADWR8000037848	1/4 - 1/2 Mile ENE
B6	CADWR8000037860	1/2 - 1 Mile NNW
B7	CADWR8000037861	1/2 - 1 Mile NNW
B8	CADWR8000037862	1/2 - 1 Mile NNW
9	20370	1/2 - 1 Mile SSE
10	CADWR8000037815	1/2 - 1 Mile South
14	20366	1/2 - 1 Mile SE
16	6489	1/2 - 1 Mile ENE

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG13000008957	1/4 - 1/2 Mile WNW

PHYSICAL SETTING SOURCE MAP - 5743466.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- 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:	Hilton Home2Suite Prototype	CLIENT:	Achievement Engineering Corp.
ADDRESS:	3700 New Horizons Way Vacaville CA 95688	CONTACT:	Mobin Mahmoudi
LAT/LONG:	38.387279 / 121.942094	INQUIRY #:	5743466.2s
		DATE:	August 06, 2019 7:53 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
ENE
1/4 - 1/2 Mile
Lower

CA WELLS **20363**

Seq:	20363	Prim sta c:	4800797-001
Frds no:	4800797001	County:	48
District:	04	User id:	ENG
System no:	4800797	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT
Latitude:	382281.0	Longitude:	1215610.5
Precision:	3	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	4800797	System nam:	BIRDS LANDING HUNTING PRESERVE
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		

Sample date:	29-MAR-17	Finding:	1.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	28-SEP-16	Finding:	1.5
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	28-OCT-15	Finding:	3.7
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	12-JUN-14	Finding:	6.1
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	18-JUL-13	Finding:	6.3
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	03-AUG-12	Finding:	5.9
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

2
ESE
1/4 - 1/2 Mile
Lower

CA WELLS **20352**

Seq:	20352	Prim sta c:	4800738-001
Frds no:	4800738001	County:	48
District:	04	User id:	ENG
System no:	4800738	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT
Latitude:	382309.6	Longitude:	1215602.9

Precision:	3	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	4800738	System nam:	EMIL VILLA'S HICKORY PIT
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		

A3
ENE
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000037846**

State Well #:	Not Reported	Station ID:	48482
Well Name:	CofV MW-15-188ft	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	188	Basin Name:	Solano
Well Completion Rpt #:	Not Reported		

A4
ENE
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000037847**

State Well #:	Not Reported	Station ID:	48483
Well Name:	CofV MW-15-508ft	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	508	Basin Name:	Solano
Well Completion Rpt #:	Not Reported		

A5
ENE
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000037848**

State Well #:	Not Reported	Station ID:	48484
Well Name:	CofV MW-15-1815ft	Well Use:	Observation
Well Type:	Single Well	Well Depth:	1815
Basin Name:	Solano	Well Completion Rpt #:	823445

B6
NNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000037860**

State Well #:	Not Reported	Station ID:	48485
Well Name:	CofV MW-16-117ft	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	117	Basin Name:	Solano
Well Completion Rpt #:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B7
NNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000037861**

State Well #:	Not Reported	Station ID:	48486
Well Name:	CofV MW-16-1166ft	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	1166	Basin Name:	Solano
Well Completion Rpt #:	Not Reported		

B8
NNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000037862**

State Well #:	Not Reported	Station ID:	48487
Well Name:	CofV MW-16-1430ft	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	1430	Basin Name:	Solano
Well Completion Rpt #:	Not Reported		

9
SSE
1/2 - 1 Mile
Lower

CA WELLS **20370**

Seq:	20370	Prim sta c:	4800819-001
Frds no:	4800819001	County:	48
District:	04	User id:	ENG
System no:	4800819	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT
Latitude:	382248.6	Longitude:	1215610.5
Precision:	3	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	4800819	System nam:	Syar Industries Inc./Green Tree Golf
Hqname:	Not Reported	Address:	P.O. BOX 2540
City:	NAPA	State:	CA
Zip:	94558	Zip ext:	Not Reported
Pop serv:	100	Connection:	1
Area serve:	Not Reported		

10
South
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000037815**

State Well #:	Not Reported	Station ID:	48481
Well Name:	CofV MW-14	Well Use:	Observation
Well Type:	Single Well	Well Depth:	1655
Basin Name:	Solano	Well Completion Rpt #:	457452/457453

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

11
NE
1/2 - 1 Mile
Lower

FED USGS **USGS40000188088**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	006N001W01M005M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19721027	Well Depth:	140
Well Depth Units:	ft	Well Hole Depth:	140
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1980-02-29
Feet below surface:	9.85	Feet to sea level:	Not Reported
Note:	The site had been pumped recently.		

12
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000188047**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	006N001W12M002M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19780820	Well Depth:	100
Well Depth Units:	ft	Well Hole Depth:	100
Well Hole Depth Units:	ft		

13
NNE
1/2 - 1 Mile
Higher

FED USGS **USGS40000188102**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	006N001W01E001M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19710722	Well Depth:	160
Well Depth Units:	ft	Well Hole Depth:	160
Well Hole Depth Units:	ft		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database: **CA WELLS** EDR ID Number: **20366**

14
SE
1/2 - 1 Mile
Lower

Seq:	20366	Prim sta c:	4800809-001
Frds no:	4800809001	County:	48
District:	04	User id:	ENG
System no:	4800809	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT
Latitude:	382237.6	Longitude:	1215545.8
Precision:	3	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	4800809	System nam:	VALLEY EVANGELICAL FREE CHURCH
Hqname:	Not Reported	Address:	5063 MAPLE ROAD
City:	VACAVILLE	State:	CA
Zip:	95687	Zip ext:	Not Reported
Pop serv:	150	Connection:	1
Area serve:	Not Reported		

Sample date:	07-FEB-18	Finding:	18.1
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	03-JAN-18	Finding:	19.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	05-DEC-17	Finding:	19.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	07-NOV-17	Finding:	18.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	11-OCT-17	Finding:	16.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	07-SEP-17	Finding:	16.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	09-AUG-17	Finding:	18.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	07-JUN-17	Finding:	17.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	02-MAY-17	Finding:	17.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	04-APR-17	Finding:	17.5
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	07-MAR-17	Finding:	18.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	07-FEB-17	Finding:	17.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	10-JAN-17	Finding:	20.9
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	13-DEC-16	Finding:	18.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	14-NOV-16	Finding:	18.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	17-OCT-16	Finding:	19.6
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	20-SEP-16	Finding:	19.8
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	23-AUG-16	Finding:	19.5
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	26-JUL-16	Finding:	21.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	28-JUN-16	Finding:	21.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	03-MAY-16	Finding:	18.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	05-APR-16	Finding:	20.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	15-MAR-16	Finding:	21.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	09-FEB-16	Finding:	22.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	06-JAN-16	Finding:	21.
Chemical:	NITRATE (AS N)	Report units:	MG/L

Dlr:	0.4		
Sample date:	07-DEC-15	Finding:	83.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	03-NOV-15	Finding:	83.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	05-OCT-15	Finding:	82.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	08-SEP-15	Finding:	81.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	08-AUG-15	Finding:	76.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	14-JUL-15	Finding:	78.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	08-JUN-15	Finding:	82.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	05-MAY-15	Finding:	18000.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	05-MAY-15	Finding:	82.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-APR-15	Finding:	85.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	10-FEB-15	Finding:	93.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	13-JAN-15	Finding:	91.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	02-DEC-14	Finding:	88.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-NOV-14	Finding:	79.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-OCT-14	Finding:	76.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	09-SEP-14	Finding:	78.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	12-AUG-14	Finding:	73.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-JUL-14	Finding:	78.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	23-JUN-14	Finding:	71.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	08-APR-14	Finding:	83.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	11-MAR-14	Finding:	87.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	10-FEB-14	Finding:	84.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	14-JAN-14	Finding:	86.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	03-DEC-13	Finding:	80.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-NOV-13	Finding:	74.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-OCT-13	Finding:	69.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	12-AUG-13	Finding:	67.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	01-JUL-13	Finding:	67.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-JUN-13	Finding:	67.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-MAY-13	Finding:	73.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	09-APR-13	Finding:	74.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L

Dlr:	2.		
Sample date:	12-MAR-13	Finding:	73.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	12-FEB-13	Finding:	84.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	02-JAN-13	Finding:	80.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	03-DEC-12	Finding:	75.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	06-NOV-12	Finding:	75.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	02-OCT-12	Finding:	62.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	11-SEP-12	Finding:	66.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	08-AUG-12	Finding:	62.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	16-JUL-12	Finding:	62.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-JUN-12	Finding:	71.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-MAY-12	Finding:	71.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	23-APR-12	Finding:	74.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	13-MAR-12	Finding:	71.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	15-FEB-12	Finding:	75.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	09-JAN-12	Finding:	80.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

			Database	EDR ID Number
15 **NNW** **1/2 - 1 Mile** **Higher**	Site ID:	Not Reported	**AQUIFLOW**	**53095**
	Groundwater Flow:	SW		
	Shallow Water Depth:	29.46		
	Deep Water Depth:	31.04		
	Average Water Depth:	Not Reported		
	Date:	08/04/1994		

16
ENE
1/2 - 1 Mile
Lower

CA WELLS **6489**

Seq:	6489	Prim sta c:	06N/01W-01L03 M
Frds no:	4800801001	County:	48
District:	04	User id:	ENG
System no:	4800801	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	382340.0	Longitude:	1215530.0
Precision:	3	Status:	AU
Comment 1:	5139-A QUINN RD VACAVILLE-LOCATED IN SMALL LIGHT INDUSTRIAL COMPLEX		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	4800801	System nam:	NEILS SERVICE CENTER
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	50	Connection:	0
Area serve:	Not Reported		
Sample date:	07-FEB-18	Finding:	6.3
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	07-NOV-17	Finding:	5.9
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	23-OCT-17	Finding:	7.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	09-AUG-17	Finding:	1.57
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	09-AUG-17	Finding:	4.98
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	09-AUG-17	Finding:	1.3
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	30-MAY-17	Finding:	18.
Chemical:	TOTAL TRIHALOMETHANES	Report units:	UG/L
Dlr:	0.		

Sample date:	02-MAY-17	Finding:	13.
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	14-NOV-16	Finding:	0.49
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	24-MAY-16	Finding:	5.7
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	23-FEB-16	Finding:	4.6
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	23-FEB-16	Finding:	6.e-002
Chemical:	PERCHLORATE	Report units:	UG/L
Dlr:	4.		
Sample date:	07-NOV-15	Finding:	6.6
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	12-AUG-15	Finding:	2.6e-004
Chemical:	CHROMIUM, HEXAVALENT	Report units:	UG/L
Dlr:	1.		
Sample date:	12-AUG-15	Finding:	31.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	12-AUG-15	Finding:	7000.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	11-MAY-15	Finding:	0.11
Chemical:	FLUORIDE (TREATMENT RELATED-DISTRIBUTION)		
Report units:	MG/L	Dlr:	0.1
Sample date:	11-MAY-15	Finding:	44.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	10-FEB-15	Finding:	25.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-NOV-14	Finding:	26.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-AUG-14	Finding:	36.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-AUG-14	Finding:	35.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	06-MAY-14	Finding:	6.7
Chemical:	NITRATE (AS NO3)	Report units:	MG/L

Dlr:	2.		
Sample date:	03-FEB-14	Finding:	24.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	03-FEB-14	Finding:	1.35
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	03-FEB-14	Finding:	0.874
Chemical:	GROSS BETA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	25-NOV-13	Finding:	5.3
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	06-MAY-13	Finding:	33.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	19-MAR-12	Finding:	73.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-MAR-12	Finding:	34.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-MAR-12	Finding:	47.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-MAR-12	Finding:	240.
Chemical:	BARIUM	Report units:	UG/L
Dlr:	100.		
Sample date:	19-MAR-12	Finding:	60.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	19-MAR-12	Finding:	37.
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	19-MAR-12	Finding:	8400.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		

1G
NNW
1/2 - 1 Mile
Lower

Site ID:	Not Reported
Groundwater Flow:	SW
Shallow Water Depth:	29.46
Deep Water Depth:	31.04
Average Water Depth:	Not Reported
Date:	08/04/1994

AQUIFLOW **53095**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
WNW
1/4 - 1/2 Mile

OIL_GAS **CAOG13000008957**

API #:	0409520386	Well #:	1
Well Status:	Plugged	Well Type:	DH
Operator Name:	Cabeen Exploration Corp	Lease Name:	Shellhammer
Field Name:	Any Field	Area Name:	Any Area
GIS Source:	hud	Confidential Well:	N
Directionally Drilled:	N	SPUD Date:	11/24/1978

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95688	14	0

Federal EPA Radon Zone for SOLANO County: 3

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 Zip Code: 95688

Number of sites tested: 8

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

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: Department of Conservation
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 B – TOPOGRAPHIC MAPS

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.4
August 06, 2019

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

08/06/19

Site Name:

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688
EDR Inquiry # 5743466.4

Client Name:

Achievement Engineering Corp.
2455 Autumnvale Dr. Unit E
San Jose, CA 95131
Contact: Mobin Mahmoudi

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Achievement Engineering Corp. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA
Project: 7472

Coordinates:

Latitude:	38.387279 38° 23' 14" North
Longitude:	-121.942094 -121° 56' 32" West
UTM Zone:	Zone 10 North
UTM X Meters:	592391.95
UTM Y Meters:	4249315.55
Elevation:	91.00' above sea level

Maps Provided:

2012
1978, 1980
1973
1968
1953
1917
1908

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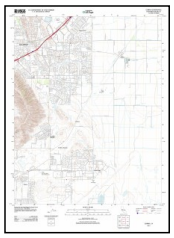
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Elmira
2012
7.5-minute, 24000



Allendale
2012
7.5-minute, 24000

1978, 1980 Source Sheets



Allendale
1978
7.5-minute, 24000
Aerial Photo Revised 1949



Elmira
1980
7.5-minute, 24000
Aerial Photo Revised 1978

1973 Source Sheets



Elmira
1973
7.5-minute, 24000
Aerial Photo Revised 1973



Allendale
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1968 Source Sheets



Allendale
1968
7.5-minute, 24000
Aerial Photo Revised 1968

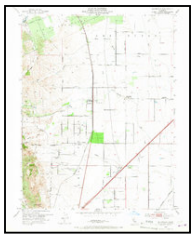


Elmira
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1953 Source Sheets



Allendale
1953
7.5-minute, 24000
Aerial Photo Revised 1949



Elmira
1953
7.5-minute, 24000
Aerial Photo Revised 1949

1917 Source Sheets



Elmira
1917
7.5-minute, 31680



Wolfskill
1917
7.5-minute, 31680

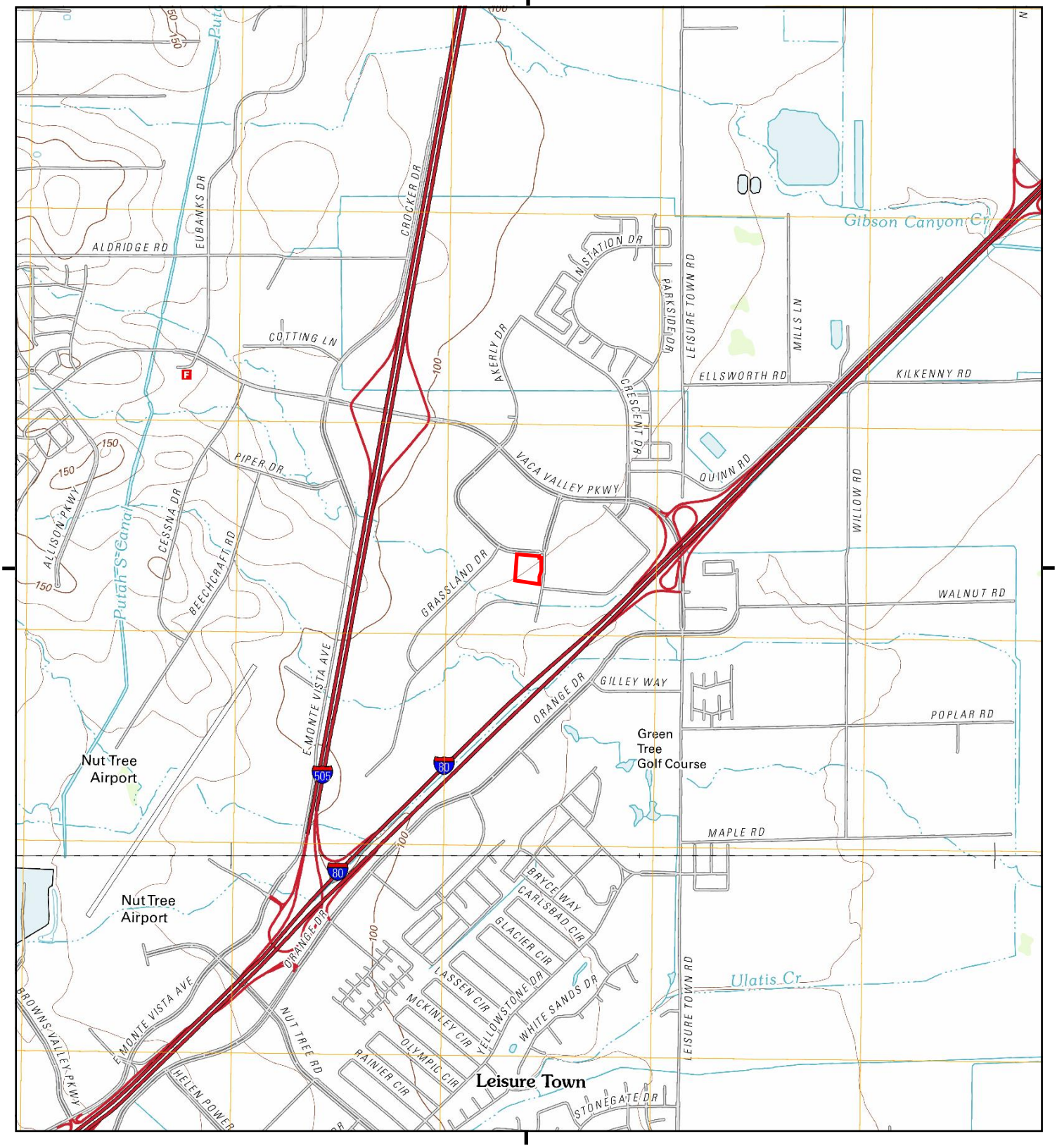
1908 Source Sheets



Vacaville
1908
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

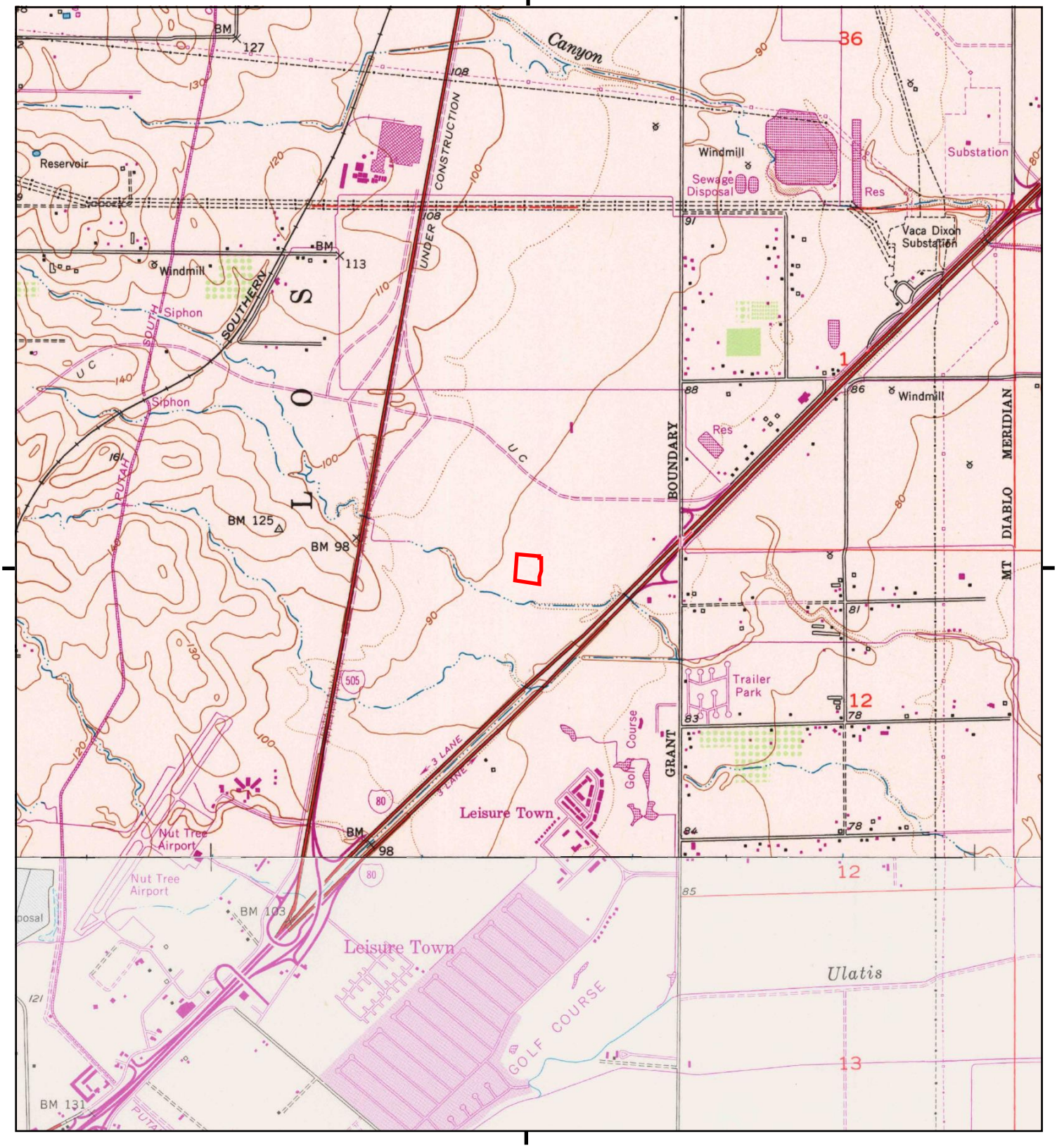
TP, Allendale, 2012, 7.5-minute
S, Elmira, 2012, 7.5-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N

Historical Topo Map

1978, 1980



This report includes information from the following map sheet(s).

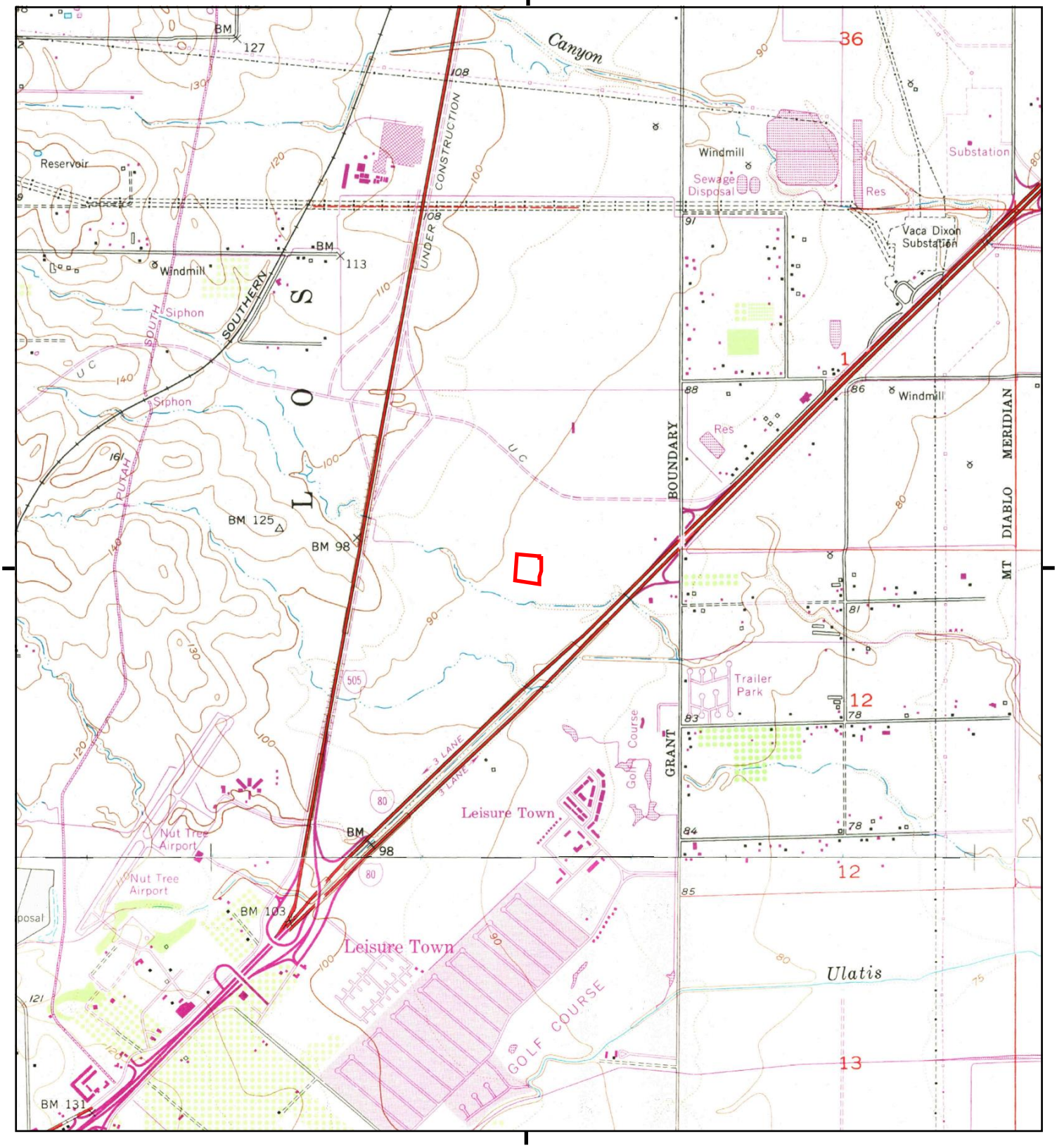
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Allendale, 1978, 7.5-minute
S, Elmira, 1980, 7.5-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

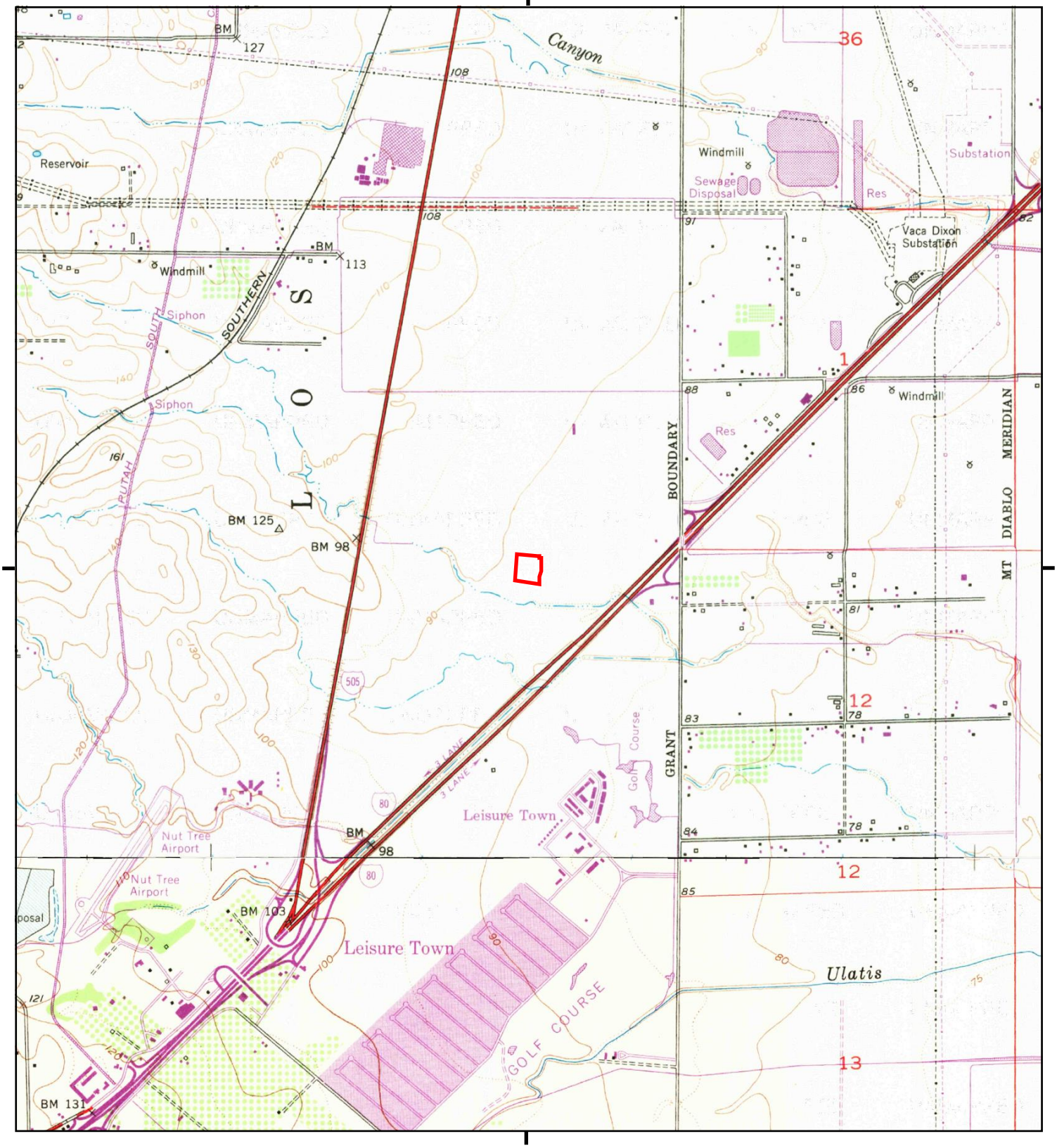
TP, Allendale, 1973, 7.5-minute
S, Elmira, 1973, 7.5-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

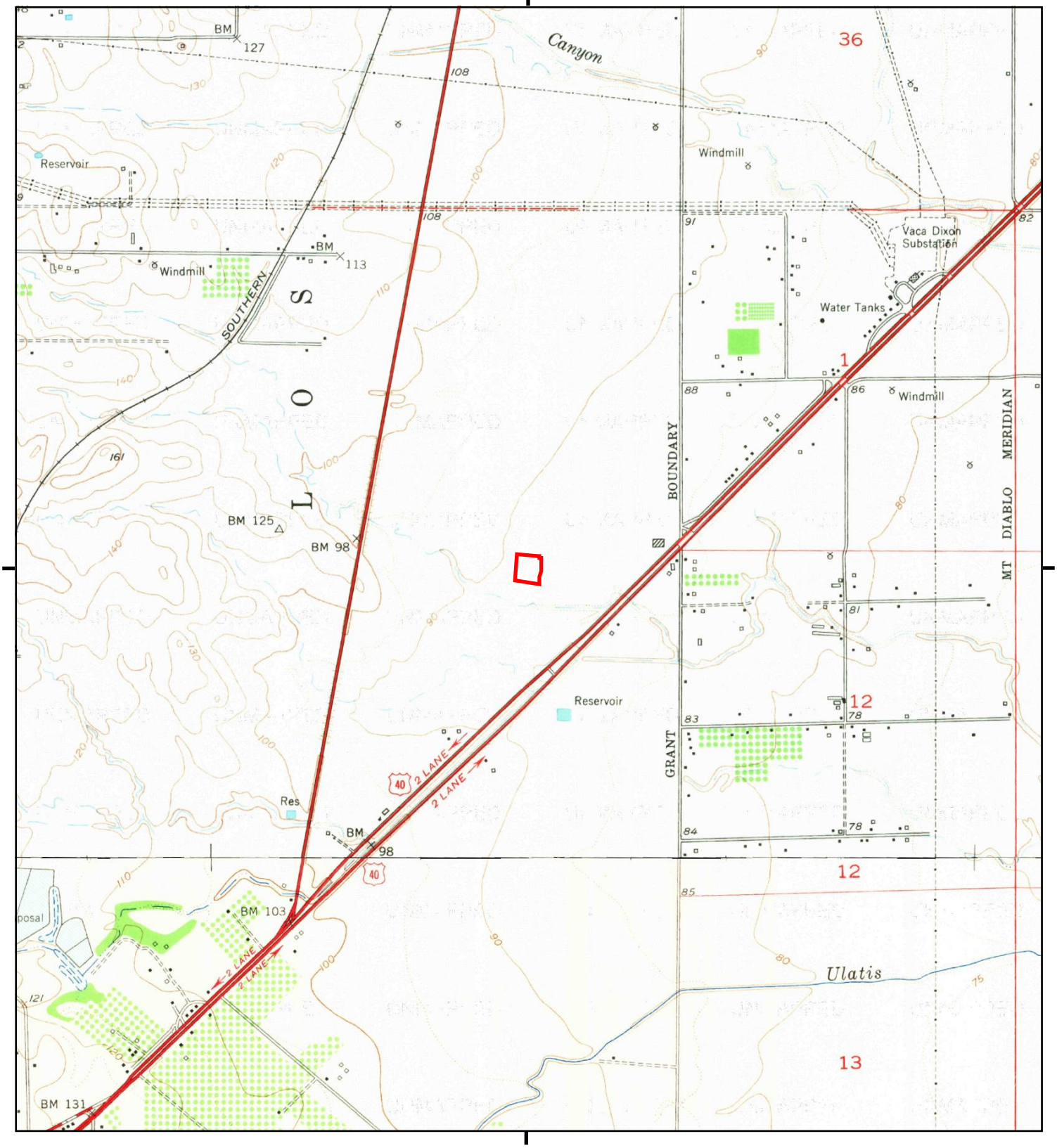
TP, Allendale, 1968, 7.5-minute
S, Elmira, 1968, 7.5-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N

Historical Topo Map

1953



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

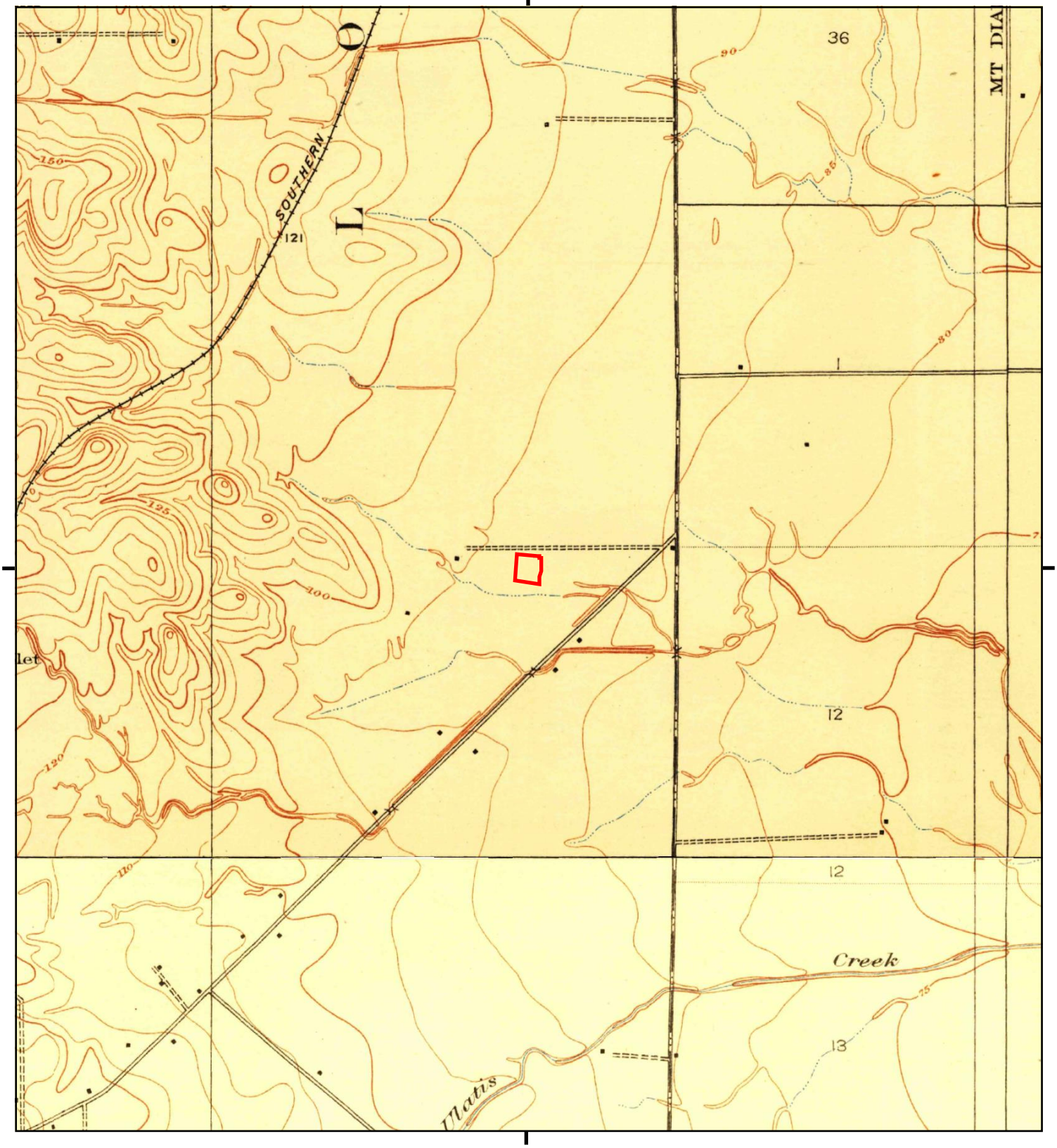
TP, Allendale, 1953, 7.5-minute
S, Elmira, 1953, 7.5-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N

Historical Topo Map

1917



This report includes information from the following map sheet(s).

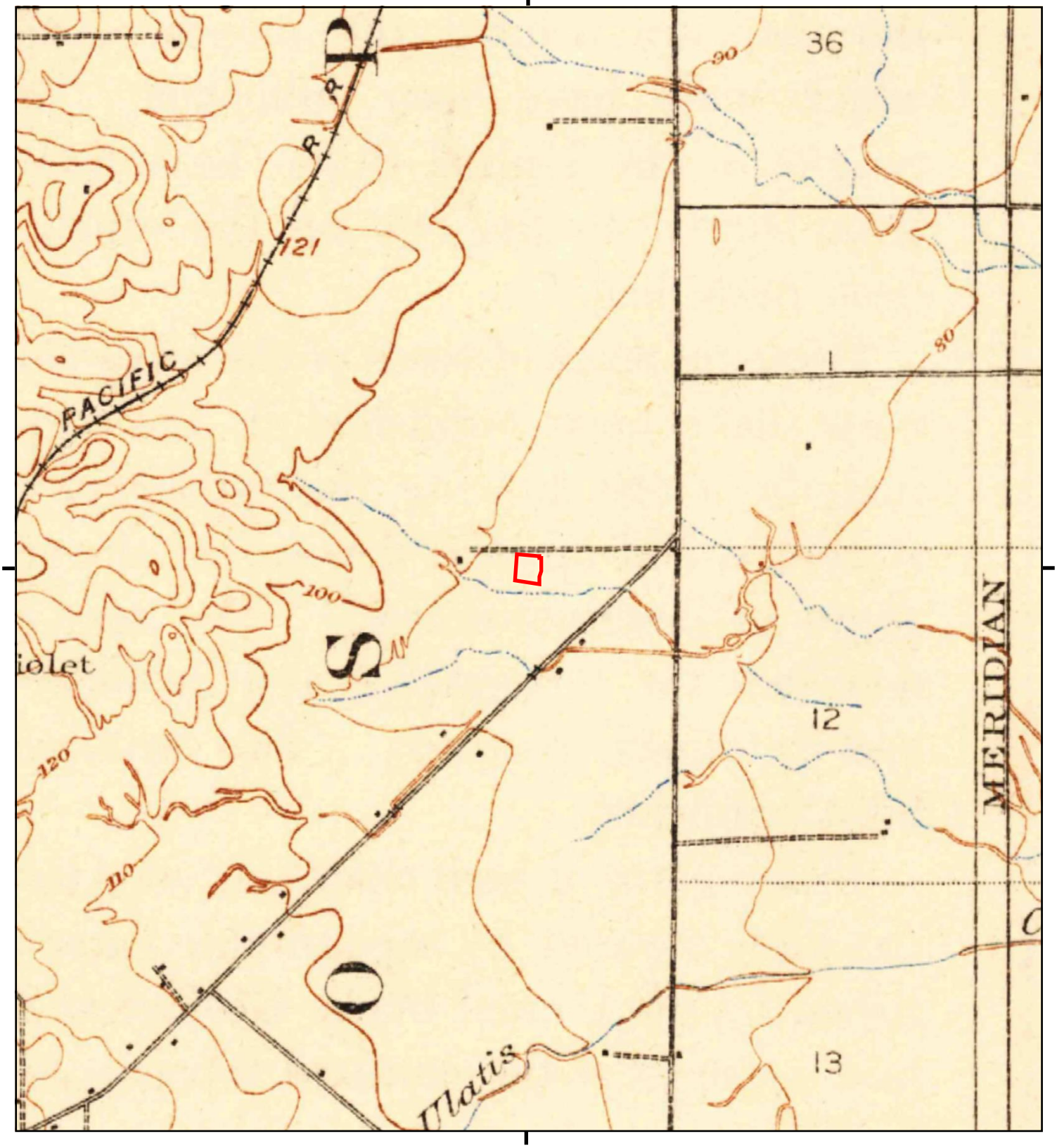
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Wolfskill, 1917, 7.5-minute
S, Elmira, 1917, 7.5-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Vacaville, 1908, 15-minute

SITE NAME: Hilton Home2Suite Prototype
ADDRESS: 3700 New Horizons Way
Vacaville, CA 95688
CLIENT: Achievement Engineering Corp.

N

APPENDIX C – AERIAL PHOTOGRAPHS

Hilton Home2Suite Prototype

3700 New Horizons Way

Vacaville, CA 95688

Inquiry Number: 5743466.11

August 07, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

08/07/19

Site Name:

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688
EDR Inquiry # 5743466.11

Client Name:

Achievement Engineering Corp.
2455 Autumnvale Dr. Unit E
San Jose, CA 95131
Contact: Mobin Mahmoudi

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1993	1"=500'	Acquisition Date: June 16, 1993	USGS/DOQQ
1984	1"=500'	Flight Date: June 08, 1984	USDA
1974	1"=500'	Flight Date: July 18, 1974	USGS
1968	1"=500'	Flight Date: May 28, 1968	USGS
1952	1"=500'	Flight Date: August 02, 1952	USDA
1937	1"=500'	Flight Date: August 25, 1937	USDA

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INQUIRY #: 5743466.11
YEAR: 2016
= 500'
N
EDR


INQUIRY #: 5743466.11
YEAR: 2012
= 500'
N
EDR



INQUIRY #: 5743466.11

YEAR: 2009

= 500'

N

EDR



INQUIRY #: 5743466.11

YEAR: 2006

= 500'

N

EDR


INQUIRY #: 5743466.11
YEAR: 1993
= 500'
N
EDR



INQUIRY #: 5743466.11

YEAR: 1984

= 500'

N

EDR


INQUIRY #: 5743466.11
YEAR: 1974
= 500'
N
EDR


INQUIRY #: 5743466.11
YEAR: 1968
= 500'
N
EDR



INQUIRY #: 5743466.11

YEAR: 1952

= 500'

N

EDR


INQUIRY #: 5743466.11
YEAR: 1937
= 500'
N
EDR

APPENDIX D – SANBORN MAPS

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.3
August 06, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

08/06/19

Site Name:

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688
EDR Inquiry # 5743466.3

Client Name:

Achievement Engineering Corp.
2455 Autumnvale Dr. Unit E
San Jose, CA 95131
Contact: Mobin Mahmoudi

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Achievement Engineering Corp. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # DEF6-44D4-A0E2

PO # NA

Project 7472

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: DEF6-44D4-A0E2

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Achievement Engineering Corp. (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

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APPENDIX E– CITY DIRECTORY ABSTRACTS

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.5
August 07, 2019

The EDR-City Directory Image Report

Environmental Data Resources Inc
6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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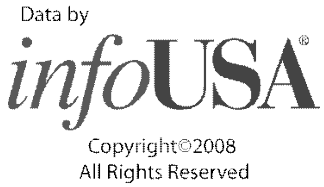


RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☐	☐	Haines Criss-Cross Directory
1990	☐	☐	Haines Criss-Cross Directory
1987	☐	☐	Haines Criss-Cross Directory
1982	☐	☐	Haines Criss-Cross Directory
1977	☐	☐	Haines Criss-Cross Directory
1973	☐	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

3700 New Horizons Way
Vacaville, CA 95688

Year	CD Image	Source	
NEW HORIZONS WAY			
2014	pg A1	EDR Digital Archive	
2010	pg A2	EDR Digital Archive	
2005	pg A3	EDR Digital Archive	
2000	pg A4	EDR Digital Archive	
1995	-	Haines Criss-Cross Directory	Street not listed in Source
1990	-	Haines Criss-Cross Directory	Street not listed in Source
1987	-	Haines Criss-Cross Directory	Street not listed in Source
1982	-	Haines Criss-Cross Directory	Street not listed in Source
1977	-	Haines Criss-Cross Directory	Street not listed in Source
1973	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

NEW HORIZONS WAY 2014

1000 GENENTECH INC
GENETECH
KINETIC SYSTEMS INC
1070 MCMURTRIE, REGINA
3700 KAISER PERMANENTE BROWN
KASIER PERM CLINIC INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

NEW HORIZONS WAY 2010

1000	CUPERTINO ELECTRIC INC
	DEER STEEL ERECTION COMPANY
	GENENTECH INC
	KINETIC SYSTEMS INC
	MAI INDUSTRIES
3700	KASIER PERM CLINIC INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

NEW HORIZONS WAY 2005

1000	CUPERTINO ELECTRIC INC
	DEER STEEL ERECTION COMPANY
	DPR CONSTRUCTION INC
	FLUOR
	GENENTECH INC
	HERRERO CONTRACTORS INC
	ISAT
	KINETIC SYSTEMS INC
	MAI INDUSTRIES
	MCCARTHY BLDG COMPANIES INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

NEW HORIZONS WAY 2000

1000	DPR CONSTRUCTION INC
	GENENTECH INC
	JACOBS ENGINEERING GROUP INC
	KINETIC SYSTEMS INC
	MAI INDUSTRIES

APPENDIX F – FOIA INFORMATION

ACHIEVEMENT ENGINEERING CORP.

Project Number: 3957
Date: August 6th, 2019

To: California Department of Toxic Substances Control (DTSC)
700 Heinz Ave., Suite 100
Berkeley, California 94710

Subject: FOIA Request
Environmentally Hazardous Material for
3700 New Horizons Way, Vacaville, CA 95688, USA

Dear Sir. /Madam:

Achievement Engineering Corp. (AEC) has been commissioned to perform a Phase I Environmental Site Assessment at the subject site. As part of this study, any records from California Department of Toxic Substances Control (DTSC) regarding environmental issues or hazardous materials needs to be collected. Thus, under the privileges of Freedom of Information Act, we are requesting that you kindly provide us any report pertaining to the subject site. This is a general request from all divisions of California Department of Toxic Substances Control.

Should you have any questions, please do not hesitate to call the undersigned.

Respectfully Submitted,
Achievement Engineering Corp.

Mobin Mahmoudi
Project Coordinator



County response:

After visiting the county in person and looking for records. It was determined that that are no records associated with this address:

3700 New Horizons Way, Vacaville, CA 95688, USA

Mobin

Fire department response:

Hello,

I would like to confirm the address or the business located at the address. We do not have 3700 New Horizons Way in our system.

Thanks,

Sabrina Jansen
Interim Administrative Assistant
Vacaville Fire Department
650 Merchant Street | Vacaville, CA 95688
(707)-449-5215

APPENDIX G – SITE PHOTOS



FIGURE 1- Site location (undeveloped land)



FIGURE 2- Site location (the hill at the center of the site)

APPENDIX H – SITE MAP

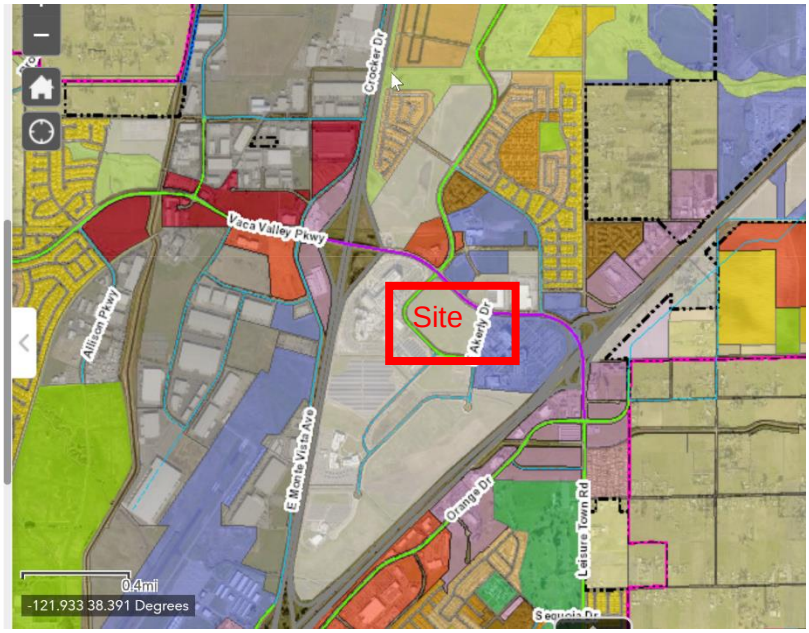

Vaca Valley Pkwy
N Village Pkwy
New Horizons Way
Vaca Valley Pkwy
Kids Gone Wild
Bliss Urban Arts Center
Quinn Rd
Vaca Valley Pkwy
Akerly Dr
Quality Dr
Kaiser Permanente
Vacaville Medical Center
New Horizons Way
Grassland Dr
Site
Grassland Dr
The Brass Tap
Vacaville Honda
Starbucks
Google

Site Plan

APPENDIX I – SITE ZONE MAP

General Plan Land Use

- Rural Residential (RR)
- Residential Estate (RE)
- Residential Golf Course (RG)
- Residential Low Density (RL)
- Residential Low Medium Density (RLM)
- Residential Medium Density (RM)
- Residential Medium High Density (RMH)
- Residential High Density (RH)
- Residential Manufactured Home Park (MHP)
- Mixed Use (MU)
- Commercial General (CG)
- Commercial Neighborhood (CN)
- Commercial Service (CS)
- Commercial Highway (CH)
- Commercial Office (CO)
- Technology Park (TP)
- Business Park (BP)
- Industrial Park (IP)
- Urban Reserve (UR)
- Public/Institutional (P)



Site Zone Map

APPENDIX J– BUILDING PERMIT REPORT

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.8
August 06, 2019

EDR Building Permit Report

Target Property and Adjoining Properties

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting 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), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-13 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records - The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquires (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.

EDR® Environmental Data Resources Inc

BUILDFAX® PROPERTY HISTORY

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Achievement Engineering Corp. on Aug 06, 2019.

TARGET PROPERTY

3700 New Horizons Way
Vacaville, CA 95688

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **NO PERMITS IDENTIFIED**

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Name: JurisdictionName
Years: Years
Source: Source
Phone: Phone

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Vacaville
Years: 1989-2019
Source: City of Vacaville, Building Permits, VACAVILLE, CA
Phone: (707) 449-5152

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

3700 New Horizons Way
Vacaville, CA 95688

No Permits Found

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Permits Found

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use(s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000
Permit Type: Bldg -
New Permit Number: 101000000405
Status: Valuation: $1,000,000.00
Contractor Company: OWNER-BUILDER
Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

APPENDIX K– TAX REPORT

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.6
August 06, 2019

The EDR Property Tax Map Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

NO COVERAGE

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APPENDIX L – ENVIRONMENTAL LIEN

Hilton Home2Suite Prototype
3700 New Horizons Way
Vacaville, CA 95688

Inquiry Number: 5743466.7
August 08, 2019

EDR Environmental Lien and AUL Search

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

3700 New Horizons Way
Hilton Home2Suite Prototype
Vacaville, CA 95688

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

RESEARCH SOURCE

Source 1:

Solano Recorder
Solano, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	O. K. and B
Title received from:	Vaca Valley Star LP
Deed Dated	1/12/2009
Deed Recorded:	2/5/2009
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	O.K. and B
Parcel # / Property Identifier:	0133120380
Comments:	See Exhibit

Deed Exhibit 1

RECORDING REQUESTED BY:
Stewart Title of Sacramento

AND WHEN RECORDED MAIL TO
AND UNLESS OTHERWISE SHOWN BELOW,
MAIL TAX STATEMENTS TO:

O.K. AND B
8615 Elder Creek Road
Sacramento, 95828

Recorded in Official Records, Solano County

Marc C. Tonnesen
Assessor/Recorder

2/05/2009
1:40 PM
AR51
06

06 Placer Title Co

Doc#: 200900008458

Titles: 1 **Pages: 7**

Fees	26.00
Taxes	0.00
Other	0.00
PAID	$26.00

PTC 506-21009

THIS SPACE FOR RECORDER'S USE ONLY:

Escrow No.: CM-15010987-LK

GRANT DEED IN LIEU OF FORECLOSURE

THE UNDERSIGNED GRANTOR(S) DECLARE(s) First Deed of Trust
DOCUMENTARY TRANSFER TAX is $0.00
The grantee was foreclosing beneficiary;
The amount of consideration paid by the grantee is $1,886,625.00
The amount of debt with accrued interest is $1,886,625.00
Difference in amounts, if any: $
(x) Unincorporated area **AND**

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
VACA VALLEY STAR, L.P., A CALIFORNIA LIMITED PARTNERSHIP
hereby GRANT(s) to:**O.K. AND B., A CALIFORNIA GENERAL PARTNERSHIP**
the real property in the Countyof Solano, State of California, described as:
LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A" AND MADE A PART HEREOF

THIS DEED IS AN ABSOLUTE CONVEYANCE, THE GRANTOR(S) HAVING SOLD SAID LAND TO THE GRANTEE(S) FOR A FAIR AND ADEQUATE CONSIDERATION, SUCH CONSIDERATION, IN ADDITION TO THAT ABOVE RECITED, BEING FULL SATISFACTION OF ALL OBLIGATIONS SECURED BY THE DEED OF TRUST EXECUTED BY GRANTOR(S) AS TRUSTOR TO STEWART TITLE OF SACRAMENTO, A CALIFORNIA CORPORATION AS TRUSTEE RECORDED AS INSTRUMENT NO 2007-00051819 , OFFICIAL RECORDS OFSOLANO COUNTY AND ASSIGNED TO BUZZ OATES DEVELOPMENT, LP BY ASSIGNMENT OF DEED OF TRUST DATED DECEMBER 5, 2007, RECORDED AS INSTRUMENT NO. 2009-00002369 AND THEN ASSIGNED TO O.K. AND B. BY ASSIGNMENT OF DEED OF TRUST DATED JANUARY 13, 2009, RECORDED AS INSTRUMENT NO 2009-00003492, SOLANO COUNTY OFFICIAL RECORDS. GRANTOR(S) DECLARE(S) THAT THIS CONVEYANCE IS FREELY AND FAIRLY MADE, AND THAT THERE ARE NO AGREEMENTS. ORAL OR WRITTEN, OR OTHER THAN THIS DEED BETWEEN GRANTOR(S) AND GRANTEE(S) WITH RESPECT TO SAID LAND

DATED January 12, 2009

SEE SIGNATURE EXHIBIT ATTACHED HERETO AND MADE A PART HEREOF.

STATE OF CALIFORNIA
COUNTY OF Placer
On January 29, 2009
before me, Martin L. Atencio,
A Notary Public in and for said State personally appeared
Clifford D. Brabant

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct
WITNESS my hand and official seal.

Signature Martin L. Atencio

MARTIN L. ATENCIO
Commission # 1560506
Notary Public — California
Placer County
My Comm. Expires Mar 17, 2009

(This area for official notarial seal)

SIGNATURE EXHIBIT

VACA VALLEY STAR, L.P., a California Limited Partnership

By: COMANCHE STAR INVESTMENTS, INC., A CALIFORNIA CORPORATION, GENERAL PARTNER

By:_____
CLIFFORD D. BRABANT, PRESIDENT

APPROVED BY:

O.K. AND B., a California General Partnership

BY: THE MARVIN L. OATES TRUST DATED MARCH 7, 1995, GENERAL PARTNER

BY:_____
PHILIP D. OATES, CO-TRUSTEE

BY:_____
LARRY ALLBAUGH, CO-TRUSTEE

ACKNOWLEDGMENT

State of California
County of Sacramento } *ss.*

On February 2, 2009 before me, Nou Vang, Notary Public, personally appeared Philip D. Oates and Larry Allbaugh, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

NOU VANG
COMM. # 1806548
NOTARY PUBLIC - CALIFORNIA
SACRAMENTO COUNTY
MY COMM. EXP. JULY 15, 2012

Signature

(seal)

OPTIONAL INFORMATION

Date of Document _____

Type or Title of Document _____

Number of Pages in Document _____

Document in a Foreign Language _____

Thumbprint of Signer

Type of Satisfactory Evidence:
_____ Personally Known with Paper Identification
_____ Paper Identification
_____ Credible Witness(es)

☐ Check here if no thumbprint or fingerprint is available.

Capacity of Signer:
_____ Trustee
_____ Power of Attorney
_____ CEO / CFO / COO
_____ President / Vice-President / Secretary / Treasurer
_____ Other: _____

Other Information: _____
_____

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EXHIBIT "A"
LEGAL DESCRIPTION

THE LAND DESCRIBED HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SOLANO, CITY OF , AND IS DESCRIBED AS FOLLOWS:

PARCEL 4F, AS SHOWN ON THAT CERTAIN PARCEL MAP ENTITLED: "PARCEL MAP, BEING A RESUBDIVISION OF PARCEL 4A AS SHOWN IN BOOK 39 OF PARCEL MAPS, PAGE 37, IN THE OFFICE OF THE COUNTY REORDER OF SOLANO COUNTY, STATE OF CALIFORNIA", FILED ON SEPTEMBER 15, 1995 IN BOOK 39 OF PARCEL MAPS, AT PAGE 43, SOLANO COUNTY RECORDS.

EXCEPTING THEREFROM AN UNDIVIDED ONE-HALF (1/2) INTEREST IN ALL MINERALS, MINERAL DEPOSITS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES OF EVERY KIND AND CHARACTER BELOW 500 FEET FROM THE SURFACE OF SAID LAND, BUT WITHOUT, HOWEVER, THE RIGHT OF SURFACE ENTRY, AS EXCEPTED AND RESERVED IN THE DEED FROM MARGARET JOSEPHINE SHELLHAMMER TO GERTRUDE M. EAMES, DATED JUNE 8, 1956, RECORDED JUNE 12, 1956 IN BOOK 833 OF OFFICIAL RECORDS, PAGE 480 AND IN DEED FROM MARGARET JOSEPHINE SHELLHAMMER TO BARBARA C. SANTOS DATED DECEMBER 28, 1962, RECORDED JANUARY 4, 1963 IN BOOK 1178 OF OFFICIAL RECORDS, PAGE 520 AND IN DEED FROM MARGARET JOSEPHINE SHELLHAMMER TO ROBERTA SANTOS, DATED DECEMBER 28, 1962, RECORDED JANUARY 4, 1963 IN BOOK 1178 OF OFFICIAL RECORDS, PAGE 529, SOLANO COUNTY RECORDS.

ALSO EXCEPTING AN UNDIVIDED ONE-HALF (1/2) INTEREST IN ALL OIL, GAS AND OTHER HYDROCARBONS, NON-HYDROCARBON GASES OR GASEOUS SUBSTANCES, ALL OTHER MINERALS OF WHATSOEVER NATURE, WITHOUT REGARD TO SIMILARITY TO THE ABOVE MENTIONED SUBSTANCES, AND ALL SUBSTANCES THAT MAY BE PRODUCED THEREWITH FROM SAID REAL PROPERTY AS RESERVED IN THE DEED FROM CHEVRON U.S.A. INC., A CORPORATION, RECORDED APRIL 1, 1987 IN BOOK 1987, PAGE 42125, OFFICIAL RECORDS, AS INSTRUMENT NO. 21698.

ALSO EXCEPTING AN UNDIVIDED ONE-HALF (1/2) INTEREST IN ALL GEOTHERMAL RESOURCES EMBRACING, INDIGENOUS STEAM, HOT WATER AND HOT BRINES, STEAM AND OTHER GASES, HOT WATER AND HOT BRINES RESULTING FROM WATER, GAS AND OTHER FLUIDS ARTIFICIALLY INTRODUCED INTO SUBSURFACE FORMATIONS, HEAT OR OTHER ASSOCIATED ENERGY FOUND BENEATH THE SURFACE OF THE EARTH, AND BYPRODUCTS OF ANY OF THE FOREGOING SUCH AS MINERALS (EXCLUSIVE OF OIL OR HYDROCARBON GAS THAT CAN BE SEPARATELY PRODUCED) WHICH ARE FOUND IN SOLUTION OR ASSOCIATION WITH OR DERIVED FROM ANY OF THE FOREGOING, AS RESERVED IN THE DEED FROM CHEVRON U.S.A. INC., A CORPORATION, RECORDED APRIL 1, 1987 IN BOOK 1987, PAGE 42125, OFFICIAL RECORDS, AS INSTRUMENT NO. 21698.

ALSO THE SOLE AND EXCLUSIVE RIGHT FROM TIME TO TIME TO BORE OR DRILL AND MAINTAIN WELLS AND OTHER WORKS INTO AND THROUGH SAID REAL PROPERTY AND ADJOINING STREETS, ROADS AND HIGHWAYS BELOW A DEPTH OF FIVE HUNDRED (500') FEET FROM THE SURFACE THEREOF FOR THE PURPOSE OF EXPLORING FOR AND PRODUCING ENERGY RESOURCES, THE RIGHT TO PRODUCE, INJECT, STORE AND REMOVE FROM AND THROUGH SAID BORES, WELLS OR WORKS, OIL, GAS, WATER AND OTHER SUBSTANCES OF WHATEVER NATURE, INCLUDING THE RIGHT TO PERFORM BELOW SAID DEPTH ANY AND ALL OPERATIONS DEEMED BY GRANTOR NECESSARY OR CONVENIENT FOR THE EXERCISE OF SUCH

EXHIBIT "A"
LEGAL DESCRIPTION continued

RIGHTS, AS RESERVED IN THE DEED FROM CHEVRON U.S.A. INC., A CORPORATION, RECORDED APRIL 1, 1987 IN BOOK 1987, PAGE 42125, OFFICIAL RECORDS, AS INSTRUMENT NO. 21698.

APN: 0133-120-380

Estoppel Affidavit

State of California

County of Placer

VACA VALLEY STAR, L.P., A CALIFORNIA LIMITED PARTNERSHIP, of legal age, being first sworn, deposes and says:

THAT they are the identical parties who made, executed and delivered that certain Grant Deed to **O.K. AND B., A CALIFORNIA GENERAL PARTNERSHIP** dated January 12, 2009 and recorded as Instrument No. 2009000038458on 2-5-09, 2009 Official Records of the County of **Solano**, State of California, conveying the property described therein;

THAT said Deed is intended to be and is an absolute conveyance of the title to said property to the grantee(s) named therein, and was not and is not now intended as a mortgage, trust conveyance or security of any kind;

THAT it was the intention of affiant as grantor(s) in said deed to convey, and by said Deed these affiants did convey, to the grantee(s) therein, all their right, title and interest absolutely in and to said property and that possession of said property has been surrendered to the grantee(s);

THAT in the execution and delivery of said deed, affiant(s) were not acting under any misapprehension as to the effect thereof and acted freely and voluntarily and were not acting under coercion or duress;

THAT the consideration for said deed was and is payment to the affiant of the sum of **$0.00** by grantees, and the full cancellation of all debits, obligations, costs and charges secured by that certain deed of trust heretofore existing on said property described as follows:

DEED OF TRUST: DATED APRIL 26, 2007
TRUSTOR: VACA VALLEY STAR, L.P., A CALIFORNIA LIMITED PARTNERSHIP
TRUSTEE: STEWART TITLE OF SACRAMENTO, A CALIFORNIA CORPORATION
BENEFICIARY: ASSET PRESERVATION, INC., A CALIFORNIA CORPORATION
RECORDED: MAY 4, 2007 AS INSTRUMENT NO. 2007-00051819 OF OFFICIAL RECORDS IN THE OFFICE OF THE COUNTY RECORDER OF **Solano** COUNTY, STATE OF CALIFORNIA AND THE RECONVEYANCE OF SAID PROPERTY UNDER SAID DEED OF TRUST;

THAT at the time of making said Deed, affiant believed and now believes that the aforesaid consideration therefor represented the fair value of said property;

THAT this affidavit is made for the protection and benefit of the grantee(s) in said deed, their successors and assigns and all other parties hereafter dealing with or who may acquire an interest in said property and particularly for the benefit of **STEWART TITLE OF SACRAMENTO AND PLACER TITLE COMPANY** which is about to insure the title to said property in reliance thereon, and any other title company which may hereafter insure the title to said property;

THAT affiant will testify, declare, depose or certify before any competent tribunal, officer or person, in any case now pending or which may hereafter by instituted to the truth of the particular facts set forth above.

SEE SIGNATURE EXHIBIT ATTACHED HERETO AND MADE A PART HEREOF

STATE OF CALIFORNIA
COUNTY OF Placer

Subscribed and sworn to (or affirmed) before me on this 2nd Day of February, 2009 by Clifford D. Brabant, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Notary Signature

BMP1 N. R. MILLER COMM. #1803161 Notary Public-California PLACER COUNTY My Comm. Exp. June 22, 2012 BMP1

SIGNATURE EXHIBIT

VACA VALLEY STAR, L.P., a California Limited Partnership

By: COMANCHE STAR INVESTMENTS, INC , A CALIFORNIA CORPORATION, GENERAL PARTNER

By: ✓ Clifford D Brabant
CLIFFORD D. BRABANT, PRESIDENT

END OF DOCUMENT