



# Imperial County Planning & Development Services Planning / Building

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**Jim Minnick**  
DIRECTOR

TO:

Chairman Mike Goodsell  
Vice Chairman  
Commissioner Dennis Logue  
Commissioner Jerry Arguelles  
Commissioner Sylvia Chavez

FROM:

Jim Minnick, Secretary *for*   
Airport Land Use Commission  
Director of Planning & Development

SUBJECT:

Public Hearing to Consider the Ormat Truckhaven General Plan Amendment and Zone Change project. The proposed project site is located at near the Salton Sea Airport area within Section 31 & 32, Township 10 South, Range 10 East, San Bernardino Base Meridian. Parcel centroid coordinates - 115.96545074, 33.2647488494 (Supervisory District #4) **(ALUC 04-24)** [David Black, Planner, 442-265-1736, extension 1746 or by email at [davidblack@co.imperial.ca.us](mailto:davidblack@co.imperial.ca.us)].

DATE OF REPORT: April 17, 2024

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AGENDA ITEM NO: 1

HEARING DATE: April 17, 2024

HEARING TIME: 6:00 P.M.

HEARING LOCATION: County Administrative Center  
Board of Supervisors Chambers  
940 Main Street  
El Centro, CA 92243

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## SECRETARY RECOMMENDATION

It is the Staff's recommendation that the proposed Ormat Truckhaven (Orni 5, LLC) General Plan Amendment #22-0003 and Zone Change #22-0004 project, on private properties near the Salton Sea Airport, is an acceptable land use as the project appears to be located within an airport compatibility area, and should be found consistent with the 1996 Airport Land Use Compatibility Plan, with restrictions.

## SECRETARY'S REPORT

### **Project Location:**

The proposed Project site is located north of the Salton Sea Airport area, within Parcel D, LLA #299 also being South Portion of Section 31 & 32, Township 10 South, Range 10 East, San Bernardino Base Meridian. (Supervisory District #4). The project area is approximately 520 total acres north of a runway, hanger/office facilities and associated flight safety zones surrounding the Airport runway are not part of project property. The Project area is currently zoned Low Density Residential, with a 5 acre minimum lot size (R-1 L-5).

The Imperial County General Plan Land Use Designation for the entire Project is Urban. The Salton City – Southwest WS/SC Urban Area Map Figure 4A shows the pro5-acre area with this urban area plan.

### **Project Description:**

The proposed project is a General Plan Amendment and Zone Change on a parcel north of the Salton Sea Airport, Assessor's Parcel Numbers 017-010-057. Previously, (Orni 5, LLC, the Applicant) received CUP #18-0038 from Imperial County to drill and test six (6) exploratory geothermal wells within the "Truckhaven Geothermal Leasing Area" west of the Salton Sea and south-southwest of Salton City, Imperial County, California. Two of the six exploratory geothermal wells located within APN 017-010-057 (Well #18-32 and Well #47-32) are located with a parcel area that is zoned for residential use and is outside of the County's Geothermal Overlay Zone. In compliance with Special Condition 3 (SC-3) of CUP #18-0038, the proposed Ormat-Truckhaven. The Project includes: 1) a "Zone Change (ZC #22-0004)" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R 1-L.5 to S-1; and, 2) a "General Plan Amendment (GPA #22-0003)" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential (R-1-L-5) to Recreation/Open Space (S-1); and, 3) a "General Plan Amendment (GPA #22-0003)" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

The exploratory well sites are located within 1 mile of the Salton Sea Airport, a public use airport that is privately owned by Burrtec Waste Industries. The Salton Sea Airport is included within the Airport Land Use Compatibility Plan for Imperial County Airport (County of Imperial, 1996). Per the California Public Utilities Code Section 21001 et seq. relating to the State Aeronautics Act, Section 21676(b) prior to the amendment of a general plan...within the planning boundary established by the airport land use commission pursuant to Section 21675, the local agency shall first refer the proposed action to the commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. Any proposed development in the defined safety zones, therefore, must adhere to the safety criteria and restrictions defined in Airport Land Use Compatibility Plan(s) adopted by the ALUC pursuant to the PUC, Section 21674

### **Obstruction Evaluation**

In accordance with APM-HAZ-2, the Applicant will be required to file a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) due to the height of the drill rigs. The proposed Project must comply with requirements outlined by the FAA, specified in Title 14 of the Code of Federal Regulations, Part 77. (14 CFR Part 77). Title 14 CFR Part 77.9 provides vertical and horizontal criteria for construction near an airport. Moreover, the California Public Utilities Code Section 21659 prohibits structural hazards near airports. An Obstruction Analysis will be required by the Federal Aviation Administration (FAA) in accordance with Federal Aviation

Regulation, Part 77 "Objects Affecting Navigable Airspace." To ensure compliance notices should be submitted to the FAA's Obstacle Evaluation Group (OEG) online at the following site:  
<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

Additionally, in accordance with Condition S-2 of CUP #18-0038, Well #87-6 shall be located no closer than one thousand (1,000) feet from the Salton Sea Airport Runway. Caltrans Aeronautics encourages the direct communication with the FAA and Burrtec Waste Industries, the owner of Salton City Airport throughout various phases of the Project.

Notice shall be given prior to all drilling and construction operations for each proposed exploratory wells located within 1 mile of the airport. These comments delineate the areas of review by Caltrans Aeronautics concerning airport-related noise, safety, and land use planning issues. If you have any questions, please contact me by email at [tiffany.martinez@dot.ca.gov](mailto:tiffany.martinez@dot.ca.gov). The Aviation Safety Officer for this area may also be reached for advisory or technical comments as necessary.

### **Traffic Control Plan**

Provide a Traffic Control Plan to Caltrans at least 30 days prior to the start of any construction to ensure construction impacts from construction activities to the State Highway System and travelling public are minimized/in place. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage. Potential impacts to the highway facilities (SR-86) and traveling public from the detour, demolition and other construction activities should be discussed and addressed before work begins.

### **General Plan/ALUCP Analysis:**

Under Statutory Requirements Geographic Area of Concern (f) Salton Sea Airport (2) Types of Impacts 2(1) As required by state law, the adoption or approval of any amendment to a general plan affecting the Commission's geographic area of concern include project areas that have portions of the project area that are within the Salton Sea Airport flight area zones. This project request before the Commission shows proposed uses for geothermal well production to be in compliance with ALUC Plan and the C zoning area.

Attachments:

- A. Vicinity Map
- B. EEC package
- C. Comment Letters

**Attachment A:**  
**Location Map/SITE PLAN**

# Salton City

BELLAVE

SUNRISE DR

RIVER CIR

BARBARA AVE

HARVARD AVE

DESERT CREST AVE

HAVEN DR

GOHEEN AVE

SAUNDRA AVE

STATE HWY 86

AIR PARK DR

017-010-057

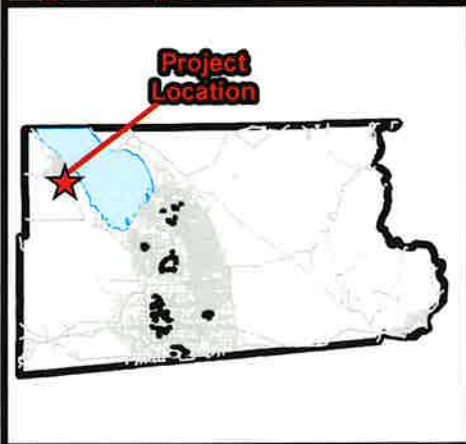
A

017-970-011

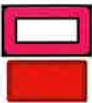
017-340-003

B2

B1



Project Location



Airport Compatibility Zones



Project Parcels



Roads



IMPERIAL COUNTY AIRPORT LAND USE COMMISSION

ALUC # 01-24

ORNI 5 LLC

APN #017-010-057-000, 017-970-011-000  
& 017-340-003-000

N



**Attachment B:**  
**EEC Hearing February 2024**

# PROJECT REPORT

**TO: ENVIRONMENTAL EVALUATION COMMITTEE**

**AGENDA DATE: February 8, 2024**

**FROM: PLANNING & DEVELOPMENT SERVICES DEPT. AGENDA TIME 1:30 PM/No.2**

PROJECT TYPE: Ormat-Truckhaven Geothermal Exploration Well Project (Orni 5 LLC)  
GPA #22-0003 and ZC #22-0004 SUPERVISOR DIST: #4  
LOCATION: 747 Skyview Drive, APN's: 017-010-057 et al  
Salton Sea , CA 92251 PARCEL SIZE: 993 acres

GENERAL PLAN (existing) Urban-West Shore\Salton Sea and Recreation\Open Space

GENERAL PLAN (proposed) Recreation/Open Space with a Geothermal Overlay

ZONE (existing) S-1 (Open Space Recreation), R-1- L-5 (Low Density Residential) and BLM

ZONE (proposed) S-1 (Open Space Recreation)

GENERAL PLAN FINDINGS     CONSISTENT     INCONSISTENT     MAY BE/FINDINGS

PLANNING COMMISSION DECISION:    HEARING DATE: \_\_\_\_\_  
 APPROVED     DENIED     OTHER

PLANNING DIRECTORS' DECISION:    HEARING DATE: \_\_\_\_\_  
 APPROVED     DENIED     OTHER

ENVIRONMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 02/08/2024  
INITIAL STUDY: IS #22-0042

NEGATIVE DECLARATION     MITIGATED NEG. DECLARATION     EIR

**DEPARTMENTAL REPORTS / APPROVALS:**

PUBLIC WORKS	<input checked="" type="checkbox"/>	NONE	<input type="checkbox"/>	ATTACHED
AG	<input checked="" type="checkbox"/>	NONE	<input type="checkbox"/>	ATTACHED
APCD	<input checked="" type="checkbox"/>	NONE	<input type="checkbox"/>	ATTACHED
E.H.S.	<input checked="" type="checkbox"/>	NONE	<input type="checkbox"/>	ATTACHED
FIRE / OES	<input type="checkbox"/>	NONE	<input type="checkbox"/>	ATTACHED
SHERIFF OFFICE	<input checked="" type="checkbox"/>	NONE	<input type="checkbox"/>	ATTACHED
OTHER				

**REQUESTED ACTION:**

(See Attached)

Imperial County Planning & Development Services  
(Jim Minnick, Director)  
801 MAIN ST., EL CENTRO, CA, 92243 442-265-1736

**EEC ORIGINAL PKG**

**MITIGATED NEGATIVE DECLARATION**

*Initial Study & Environmental Analysis*

*For:*

**Ormat-Truckhaven Geothermal Exploration  
Well Project**

**Zone Change #22-0004 and General Plan Amendment #22-0003**



*Prepared By:*

**COUNTY OF IMPERIAL**

**Planning & Development Services Department**

801 Main Street  
El Centro, CA 92243  
(442) 265-1736  
[www.icpds.com](http://www.icpds.com)

**February 2024**

**EEC ORIGINAL PKG**



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Appendix B	Notice of Determination – California State Parks, Right of Entry Permit for Seismic Survey Ocotillo Wells State Recreation Vehicle Area, January 25, 2021
Appendix C	Jurisdictional Delineation Report Truckhaven Geothermal Exploration Well Project, Chambers Group, Inc., November 2022
Appendix D	Assembly Bill 52 and Senate Bill 18 Native American Consultation and Responses

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## SECTION I. INTRODUCTION

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### A. PURPOSE

This document is a  policy-level;  project level Initial Study for evaluation of potential environmental impacts resulting with the proposed Project.

### B. CEQA REQUIREMENTS AND THE IMPERIAL COUNTY "GUIDELINES AND REGULATIONS TO IMPLEMENT CEQA AS AMENDED"

As defined by Section 15063 of the State California Environmental Quality Act (CEQA) Guidelines and Section 7 of the County's "Guidelines for the Implementation of CEQA as Amended", an Initial Study is prepared primarily to provide the Lead Agency with information to use as the basis for determining whether an Environmental Impact Report (EIR), Mitigated Negative Declaration, Negative Declaration, or other environmental document, would be appropriate for providing the necessary environmental documentation and clearance for any proposed project.

- According to Section 15065, an **EIR** is deemed appropriate for a particular proposal if the following conditions occur:
- The proposal has the potential to substantially degrade quality of the environment.
  - The proposal has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
  - The proposal has possible environmental effects that are individually limited but cumulatively considerable.
  - The proposal could cause direct or indirect adverse effects on human beings.
- According to Section 15070(a), a **Negative Declaration** is deemed appropriate if the proposal would not result in any significant effect on the environment.
- According to Section 15070(b), a **Mitigated Negative Declaration** is deemed appropriate if it is determined that though a proposal could result in a significant effect, mitigation measures are available to reduce these significant effects to insignificant levels.

This Initial Study has determined that although the proposed Project has the potential results in potentially significant environmental impacts, mitigation measures are available to reduce these significant effects to insignificant levels, therefore quality of the environment and therefore, a Mitigated Negative Declaration is deemed as the appropriate document to provide necessary environmental evaluated and clearance as identified hereafter.

This Initial Study and is prepared in conformance with the California Environmental Quality Act of 1970, as amended (Public Resources Code, Section 21000 et. seq.); Section 15070 of the State & County of Imperial's Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended (California Code of Regulations, Title 14, Chapter 3, Section 15000, et. seq.); applicable requirements of the County of Imperial; and the regulations, requirements, and procedures of any other responsible public agency or an agency with jurisdiction by law.

This Initial Study and Mitigated Negative Declaration is prepared in conformance with the California Environmental Quality Act of 1970, as amended (Public Resources Code, Section 21000 et. seq.); Section 15070 of the State & County of Imperial's Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended (California Code of Regulations, Title 14, Chapter 3, Section 15000, et. seq.); applicable requirements of the County of Imperial; and the regulations, requirements, and procedures of any other responsible public agency or an agency with jurisdiction by law.

Pursuant to the *County of Imperial Guidelines for Implementing CEQA*, depending on the project scope, the County of Imperial Board of Supervisors, Planning Commission and/or Planning Director is designated the Lead Agency, in accordance with Section 15050 of the CEQA Guidelines. The Lead Agency is the public agency which has the principal responsibility for approving the necessary environmental clearances and analyses for any project in the County.

### **C. INTENDED USES OF INITIAL STUDY**

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

The Initial Study is prepared for the project will be circulated for a period of 35 days for public and agency review and comments. At the conclusion, if comments are received, the County Planning & Development Services Department will prepare a document entitled "Responses to Comments" which will be forwarded to any commenting entity and be made part of the record within 10-days of any project consideration.

### **D. CONTENTS OF INITIAL STUDY**

This Initial Study is organized as described below to facilitate a basic understanding of the existing setting and environmental implications of the proposed applications.

#### **SECTION I**

**INTRODUCTION** presents an introduction to the entire report. This section discusses the environmental process, scope of environmental review, and incorporation by reference documents.

#### **SECTION II**

**ENVIRONMENTAL CHECKLIST FORM** contains the County's Environmental Checklist Form. The checklist form presents results of the environmental evaluation for the proposed applications and those issue areas that would have either a significant impact, potentially significant impact, or no impact.

**PROJECT SUMMARY, LOCATION AND ENVIRONMENTAL SETTINGS** describes the proposed project entitlements and required applications. A description of discretionary approvals and permits required for project

implementation is also included. It also identifies the location of the project and a general description of the surrounding environmental settings.

**ENVIRONMENTAL ANALYSIS** evaluates each response provided in the environmental checklist form. Each response checked in the checklist form is discussed and supported with sufficient data and analysis as necessary. As appropriate, each response discussion describes and identifies specific impacts anticipated with project implementation.

### **SECTION III**

**III. MANDATORY FINDINGS** presents Mandatory Findings of Significance in accordance with Section 15065 of the CEQA Guidelines.

**IV. PERSONS AND ORGANIZATIONS CONSULTED** identifies those persons consulted and involved in preparation of this Initial Study.

**V. REFERENCES** lists bibliographical materials use in the preparation of this document.

### **E. SCOPE OF ENVIRONMENTAL ANALYSIS**

For evaluation of environmental impacts, each question from the Environmental Checklist Form is summarized and responses are provided according to the analysis undertaken as part of the Initial Study. Impacts and effects will be evaluated and quantified, when appropriate. To each question, there are four possible responses, including:

1. **No Impact:** A "No Impact" response is adequately supported if the impact simply does not apply to the proposed applications.
2. **Less Than Significant Impact:** The proposed applications will have the potential to impact the environment. These impacts, however, will be less than significant; no additional analysis is required.
3. **Less Than Significant With Mitigation Incorporated:** This applies where incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact".
4. **Potentially Significant Impact:** The proposed applications could have impacts that are considered significant. Additional analyses and possibly an EIR could be required to identify mitigation measures that could reduce these impacts to less than significant levels.

### **F. POLICY-LEVEL OR PROJECT LEVEL ENVIRONMENTAL ANALYSIS**

This Initial Study will be conducted under a  policy-level,  project level analysis. Regarding mitigation measures, it is not the intent of this document to "overlap" or restate conditions of approval that are commonly established for future known projects or the proposed applications. Additionally, those other standard requirements and regulations that any development must comply with, that are outside the County's jurisdiction, are also not considered mitigation measures and therefore, will not be identified in this document.

### **G. TIERED DOCUMENTS AND INCORPORATION BY REFERENCE**



Information, findings, and conclusions contained in this document are based on incorporation by reference of tiered documentation, which are discussed in the following section.

## **1. Tiered Documents**

As permitted in Section 15152(a) of the CEQA Guidelines, information and discussions from other documents can be included into this document. Tiering is defined as follows:

"Tiering refers to using the analysis of general matters contained in a broader EIR (such as the one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project."

Tiering also allows this document to comply with Section 15152(b) of the CEQA Guidelines, which discourages redundant analyses, as follows:

"Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including the general plans, zoning changes, and development projects. This approach can eliminate repetitive discussion of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review. Tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration."

Further, Section 15152(d) of the CEQA Guidelines states:

"Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:

- (1) Were not examined as significant effects on the environment in the prior EIR; or
- (2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means."

## **2. Incorporation By Reference**

Incorporation by reference is a procedure for reducing the size of EIRs/MND and is most appropriate for including long, descriptive, or technical materials that provide general background information, but do not contribute directly to the specific analysis of the project itself. This procedure is particularly useful when an EIR or Negative Declaration relies on a broadly-drafted EIR for its evaluation of cumulative impacts of related projects (*Las Virgenes Homeowners Federation v. County of Los Angeles* [1986, 177 Ca.3d 300]). If an EIR or Negative Declaration relies on information from a supporting study that is available to the public, the EIR or Negative Declaration cannot be deemed unsupported by evidence or analysis (*San Francisco Ecology Center v. City and County of San Francisco* [1975, 48 Ca.3d 584, 595]).

When an EIR or Negative Declaration incorporates a document by reference, the incorporation must comply with Section 15150 of the CEQA Guidelines as follows:

- The incorporated document must be available to the public or be a matter of public record (CEQA Guidelines, Section 15150[a]). The General Plan EIR is available, along with this document, at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243, phone (442) 265-1736.
- This document must be available for inspection by the public at an office of the lead agency (CEQA Guidelines Section 15150[b]). These documents are available at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243; phone (442) 265-1736.
- These documents must summarize the portion of the document being incorporated by reference or briefly describe information that cannot be summarized. Furthermore, these documents must describe the relationship between the incorporated information and the analysis in the tiered documents (CEQA Guidelines Section 15150[c]). As discussed above, the tiered EIRs address the entire project site and provide background and inventory information and data which apply to the project site. Incorporated information and/or data will be cited in the appropriate sections.
- These documents must include the State identification number of the incorporated documents (CEQA Guidelines Section 15150[d]). The State Clearinghouse Number for the 1993 County of Imperial General Plan Final EIR is SCH #93011023.
- The material to be incorporated in this document will include general background information (CEQA Guidelines Section 15150[f]).

## SECTION II. ENVIRONMENTAL CHECKLIST

1. Project Title: Ormat-Truckhaven Geothermal Exploration Well Project  
Zone Change #22-0004 & General Plan Amendment #22-003
2. Lead Agency Name and Address: Imperial County Planning & Development Services Department
3. Contact Person and Phone Number: Derek Newland, Planner III, 442-265-1736
4. Address: 801 Main Street, El Centro CA, 92243
5. E-mail: [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us)

6. Project Location: The Ormat-Truckhaven Geothermal Exploration Well Zone Change and General Plan Amendment Project area is located within the "Truckhaven Geothermal Leasing Area" west of the Salton Sea and south-southwest of Salton City in western Imperial County, California (Figure 1 – Regional Location Map). The six (6) exploratory wells included in the Truckhaven Geothermal Exploratory Well Project are located within the USGS Geologic Survey 7.5' quadrangle for Kane Springs NW within the three (3) parcels, listed in Table 1 below and are also located within the West Shores/Salton City Urban Area Plan (2000), west of State Route 86 and east of the northwest boundary of the Ocotillo Wells State Vehicular Recreation Area (SVRA) (Figure 2 Project Area).

The geothermal exploratory wells located within the Assessor's Parcel (APN) 017-970-011 (Well Site #32-5 and Well Site #47-5) require a General Plan Amendment to add this parcel to the Imperial County General Plan's Geothermal Energy Overlay Zone. The geothermal exploratory wells located within APN 017-010-057 (Wells #18-32 and #47-32) would require a Zone Change and General Plan Amendment to change the zone classification from R-1-L.5 to S-1, change the land use designation from Low Density Residential to Recreation/Open Space, and to add parcel APN 017-010-057 to Imperial County General Plan's Geothermal Energy Overlay Zone. Additionally, a General Plan Amendment is needed to add geothermal exploration wells as an allowable use within the Recreation and Open Space designation of the West Shores/Salton City Urban Area Plan (2000).

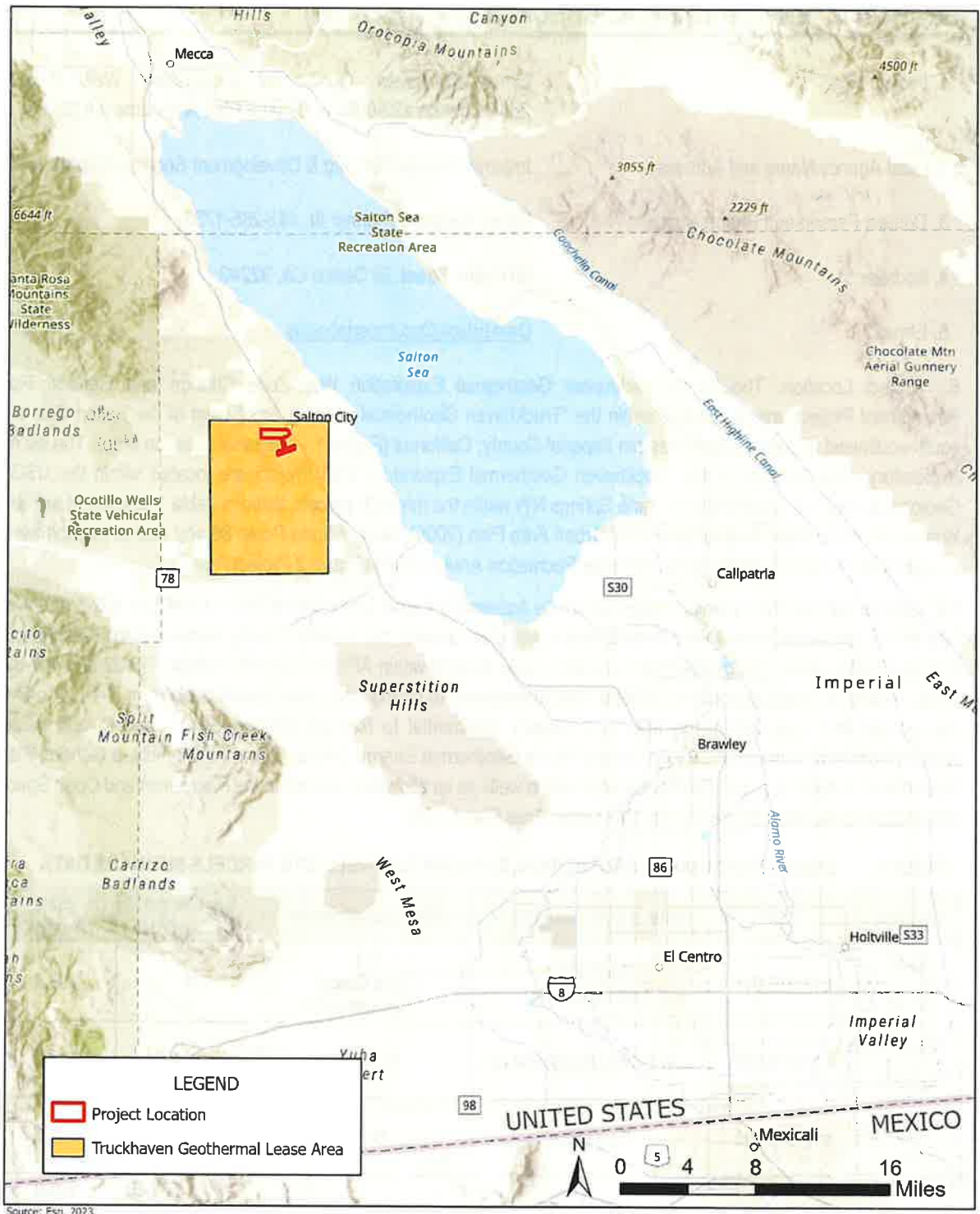
**TABLE 1. ORMAT-TRUCKHAVEN GEOTHERMAL EXPLORATION WELL SITE PARCELS SUMMARY DATA**

Well Site	APN	General Plan Designation	Zone Classification	Geothermal Overlay (Y/N)	Size (Acres)
32-5*	017-970-011	Recreation/ Open Space (a)	S-1 (Open Space/ Recreation)	N	209.4
47-5*					
18-32**	017-010-057	Low Density Residential (a)	R-1-L-.5	N	520.0
47-32**					
14-4	017-340-003	Recreation	BLM	N	213.6
17-4					
<b>TOTAL</b>					<b>993.0</b>

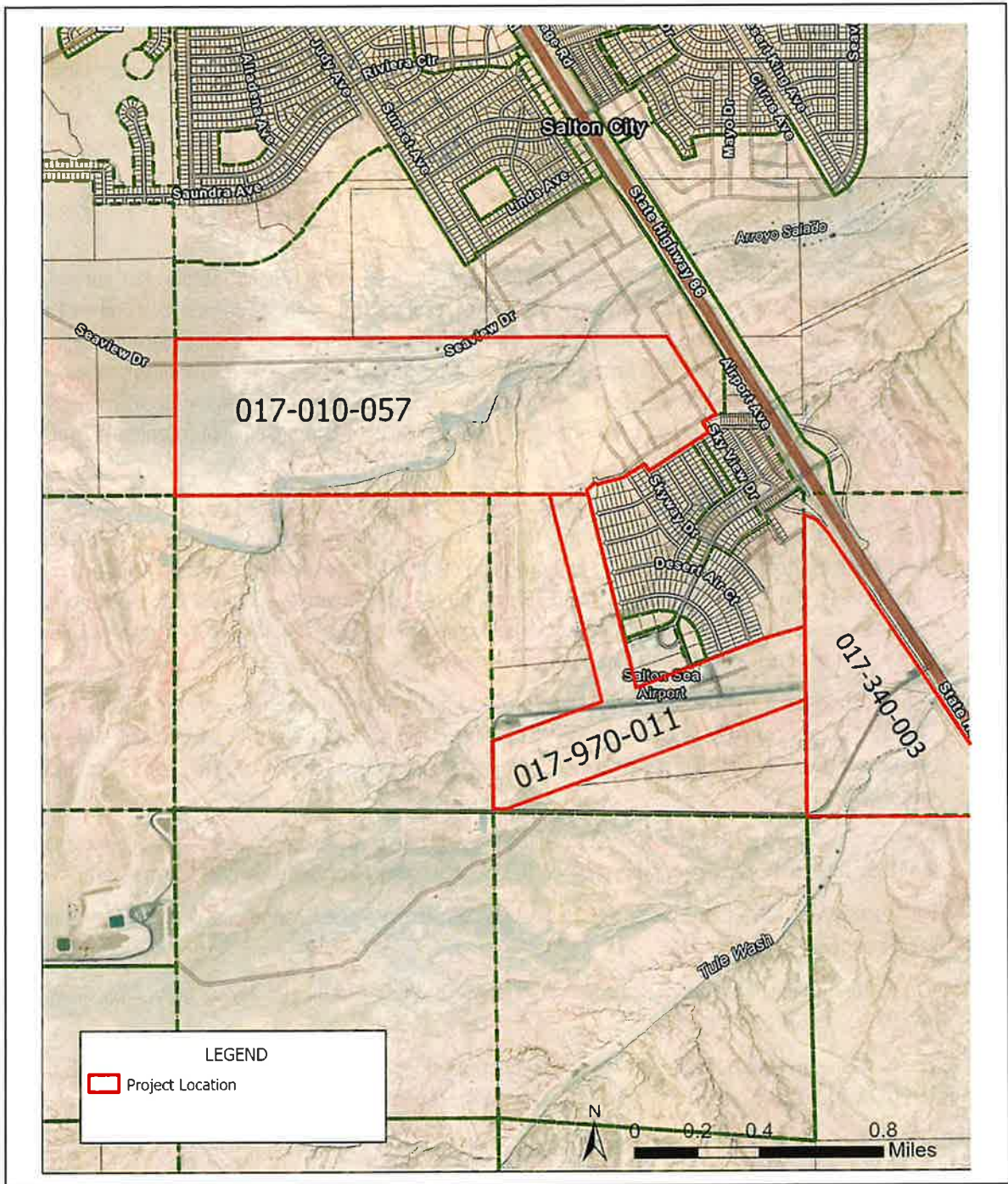
Notes: (a) Source: Salton City – Southwest WS / SC Urban Area Map; West Shores/Salton City Urban Area Plan (2000).

\* Denotes well site and accessor parcel for which a General Plan Amendment is required.

\*\* Denotes well site and accessor parcel for which a Zone Change and a General Plan Amendment are required.



Regional Location  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 1



Source: ESRI, 2023



Project Area  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
 Figure 2

EEC ORIGINAL PKG

7. Project Sponsor's Name and Address: ORNI 5, 6225 Neil Road, Reno, NV 89511 (Applicant)
8. General Plan Designation: Recreation/ Open Space and Low Density Residential
9. Zoning: S-1 and R-1-L-5
10. Description of Project:

## PROJECT BACKGROUND

The *Truckhaven Geothermal Exploration Well Project* included conducting a geophysical survey, drilling, completion, testing and monitoring up to six geothermal resource wells with the parcels identified on **Table 1** of this Initial Study. The geophysical survey provided a high-resolution image of the subsurface geologic features within the Truckhaven Geothermal Lease area to identify potential geothermal reservoirs of commercial quantity. The exploratory geothermal wells would drill into and flow test the anticipated underlying geothermal reservoir to confirm the characteristics of the geothermal reservoir and detect if the geothermal resource is commercially viable.

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**). Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant.

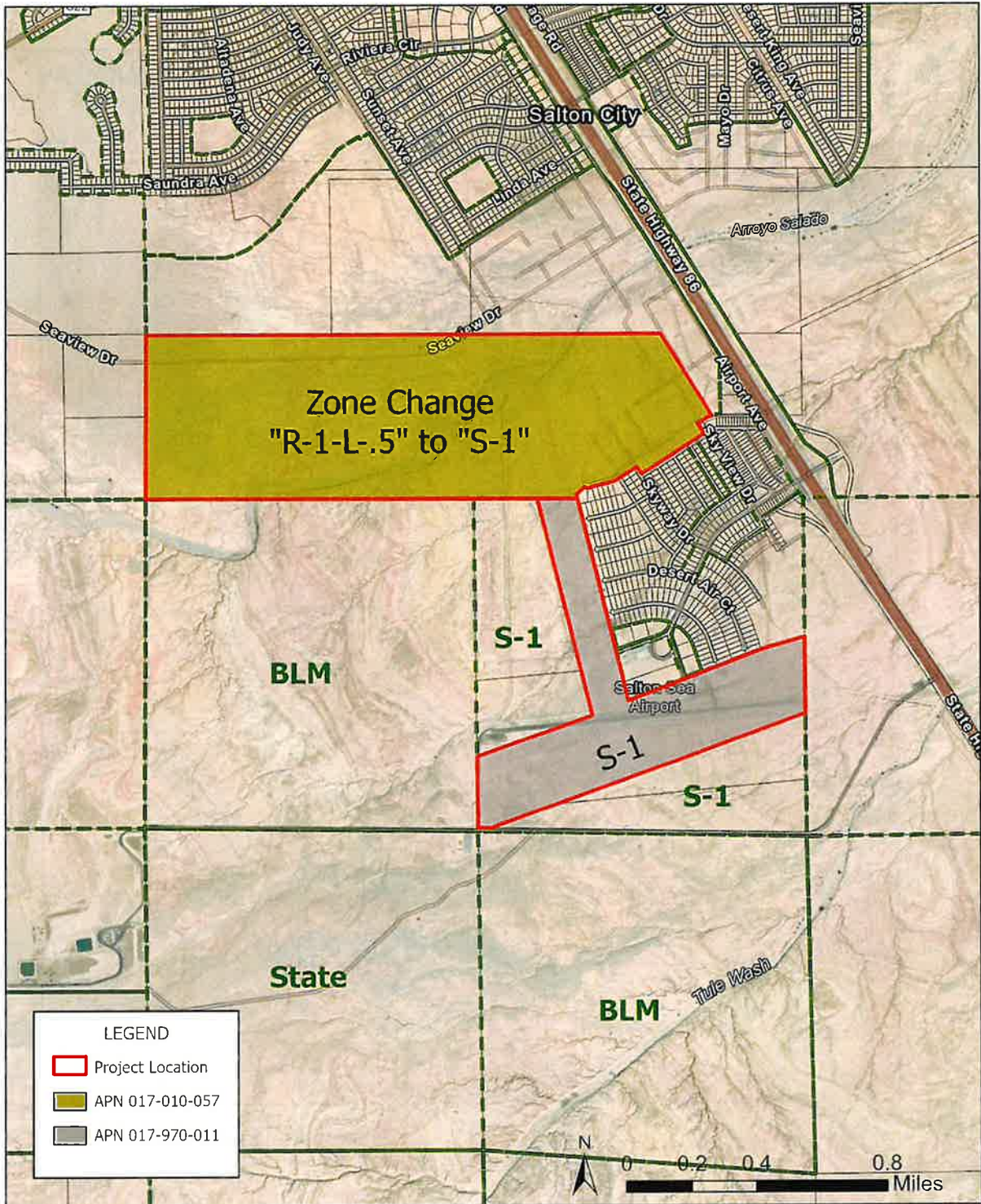
Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells.

Additionally, a General Plan Amendment is needed to add geothermal exploration wells as an allowable use within the Recreation and Open Space designation of the West Shores/Salton City Urban Area Plan (2000).

For these reasons, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
- A "General Plan Amendment" to add oil, gas, geothermal exploration uses and major facilities relating to the generation and transmission of electrical energy as allowable uses within the West Shores/Salton City Urban Area Plan; and
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County's General Plan Geothermal Overlay Zone.

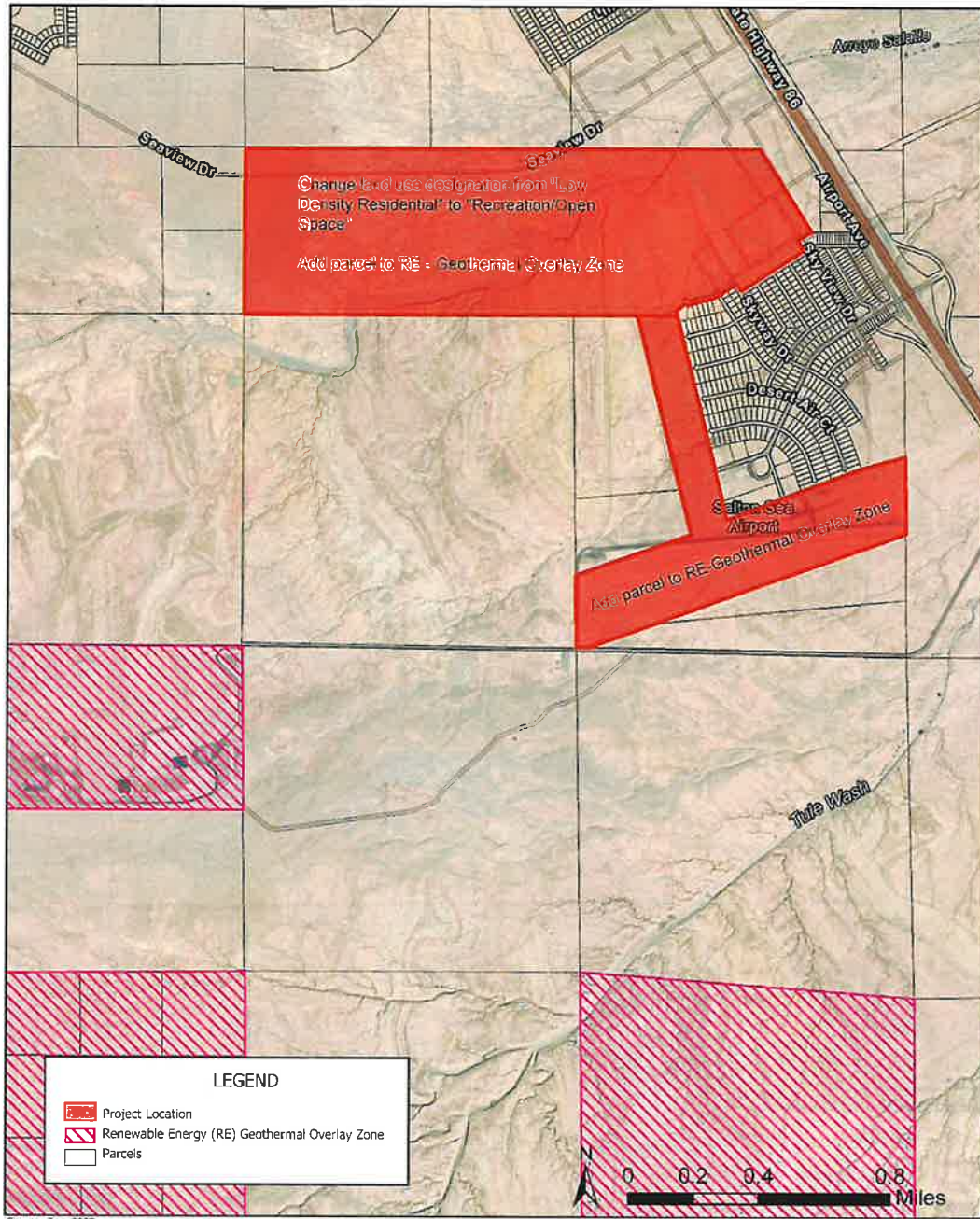
The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.



Source: Esri, 2023.



Proposed Zone Change  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 3



Proposed General Plan Amendment  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 4



**TABLE 2. EXISTING AND PROPOSED GENERAL PLAN DESIGNATIONS AND ZONE CLASSIFICATIONS**

Well Site#	APN	Existing			Proposed Project
		General Plan Designation	Zone Classification	Geothermal Overlay (Y/N)	
32-5	017-970-011	Recreation/ Open Space (a)	S-1 (Open Space/ Recreation)	N	<ul style="list-style-type: none"> <li>General Plan amendment to add parcel to General Plan's Geothermal Overlay Zone</li> </ul>
47-5					
18-32	017-010-057	Low Density Residential (a)	R-1-L-.5	N	<ul style="list-style-type: none"> <li>Change Zone from R-1-L-.5 to S-1;</li> <li>General Plan amendment to change the land use designation from Low Density Residential to Recreation/Open Space;</li> <li>General Plan Amendment to add this parcel to General Plan's Geothermal Overlay Zone</li> </ul>
47-32					
14-4	017-340-003	Recreation	BLM	N	No GPA or ZC Required
17-4	017-340-003	Recreation	BLM	N	No GPA or ZC Required

Notes: (a) Source: Salton City – Southwest WS / SC Urban Area Map; West Shores/Salton City Urban Area Plan (2000).

## PREVIOUS APPROVALS

### *California State Department of Parks and Recreation*

Orni 5, LLC, requested a Right of Entry permit from the California State Parks, Ocotillo Wells State Vehicular Recreation Area (SVRA) for the Truckhaven Geothermal Exploration Project's Seismic Survey, planned over a 23.5 square mile area, approximately 20% of the which is owned by California State Parks. On January 25, 2021, the California State Department of Parks and Recreation, as a "Responsible Agency" under the California Environmental Quality Act (CEQA), approved the Truckhaven Geothermal Exploration Well Project and a Right-of-Entry Permit from the Ocotillo Wells State Vehicle Recreation Area (SVRA) for the seismic survey, as defined in the County of Imperial's Mitigated Negative Declaration (SCH #2019119033). The Right-of-Entry permit only applied to lands owned by California State Parks and granted approval for vehicular access to requested routes of travel (both designated and undesignated) throughout the SVRA.

The California State Department of Parks and Recreation considered the 2019 Mitigated Negative Declaration for the Truckhaven Geothermal Exploration Project, as prepared by Imperial County and determined that the project will not have a significant effect on the environment. Their Notice of Determination was filed with the Office of Planning and Research, a copy of which is included as Appendix A of this Initial Study.

**State Lands Commission**

On October 20, 2022, the California State Lands Commission, as a "Responsible Agency", approved two (2) geothermal resource leases with 5-year primary terms through October 31, 2025 on State Lands Commission, school or lieu land (owned in fee), State Reserved Mineral Interest (RMI) land, and Department of Parks and Recreation fee-owned land for the Truckhaven Geothermal Exploration Well Project. The land covered under the leases included Assessor's Parcel Numbers: 017-340-011, 017-340-018, 017-340-010, 017-340-003, 017-010-048, 017-970-014, 017-340-004, 017-010-016, 017-010-056, 017-010-044, 017-010-045, 017- 010-017, 017-010-027, 017-050-013, located in the Truckhaven area, near the Salton Sea in Imperial County).

The California State Lands Commission considered the 2019 Mitigated Negative Declaration for the Truckhaven Geothermal Exploration Project, as prepared by Imperial County and determined that the project will not have a significant effect on the environment. Their Notice of Determination was filed with the Office of Planning and Research, a copy of which is included as Appendix B of this Initial Study.

11. Surrounding Land Uses and Setting:

Surrounding land uses include vacant and low density residential uses to the north; Open Space/Recreational and the Salton Sea airport to the south; Ligh Industrial uses to the east; and Open Space/Recreational to the west.

12. Other Public Agencies Whose Approval is Required (e.g., permits, financing approval, or participation agreement):

In addition to the General Plan amendment and Zone Change previously identified, the federal, state and local permits and consultations that may be required for the proposed Project are listed on **Table 3**.

**TABLE 3. POTENTIAL CONSULTATION AND PERMITTING REQUIREMENTS**

Jurisdiction Level	Type of Permit/Approval	Agency	Purpose
Federal	U.S. Army Corps of Engineers	Federal Agency with Permitting Authority	Clean Water Act (CWA) Section 404 Nationwide Permit may be acquired prior to the construction of access roads and well pads for Well Site #47-32 and Well Site #18-32 for potential impacts to non-wetland waters of the U.S.
State	401 Water Quality Certification	California Regional Water Quality Control Board, Colorado River Basin, Region 7 (RWQCB)	1602 Lake and Streambed Alteration Agreement
State	1602 Lake and Streambed Alteration Agreement	California Department of Fish and Wildlife (CDFW)	A Lake and Streambed Alteration Agreement may be acquired prior to the construction of access roads and well pads for Well Site #47-32 and Well Site #18-32 for potential impacts to non-wetland waters of the state.

**TABLE 3. POTENTIAL CONSULTATION AND PERMITTING REQUIREMENTS**

Jurisdiction Level	Type of Permit/Approval	Agency	Purpose
State	Section 401 of the Federal CWA, National Pollutant Discharge Elimination System (NPDES) General Permit for Discharge of Construction Related Stormwater Order No. 2012-0006-DWQ NPDES NO. CAS000002 (amending Order 2009-0009-DWQ as amended by 2010-0014-DWQ)	RWQCB	Monitor development and implementation of Stormwater Pollution Prevention Plans (SWPPPs) and other aspects of the NPDES permit and 401 certification program. SWPPPs are required for stormwater discharges associated with construction activities that disturb more than 1 acre of land.
State	Waste Discharge Requirements	California Regional Water Quality Control Board, Colorado River Basin, Region 7 (RWQCB)	Disposal of drilling mud.
State	Oversized/Overweight Permits  California Streets and Highways Code 660 to 711.21, California Code of Regulations (CCR) 1411.1 to 1411.6	California Department of Transportation (Caltrans)	Permits are required for oversized and/or overweight truckloads that exceed legal load limits as defined by the California Vehicle Code.
State	Drilling permit, injection permit, well abandonment permit and site abandonment plan	CalGEM	To allow drilling, reworking, and abandonment operations for geothermal wells on private or state-owned lands.
State	Hazardous Materials Business Plan	Dept. of Toxic Substance Control	Temporary on-site storage of hazardous materials.
Local	Authority to Construct, Permit to Operate	Imperial County Air Pollution Control District (ICAPCD)	Authority to Construct - required prior to constructing any article, the use of which may emit or control air contaminants. Permit to Operate – required prior to operation of any article that emits air contaminants.
Local	Building Permit	County of Imperial Planning and Development Services Department	Temporary construction and on-site trailers.
Local	Grading Permit	County of Imperial Planning and Development Services Department (ICPDSD/	Excavation or earthwork that involves over 2 feet in depth and/or fills over 1 foot in depth.

**TABLE 3. POTENTIAL CONSULTATION AND PERMITTING REQUIREMENTS**

Jurisdiction Level	Type of Permit/Approval	Agency	Purpose
		Department of Public Works (DPW)	
Local	Encroachment Permit (Public ROW)	County of Imperial DPW	Required any time work is performed within the County Roads and ROW (e.g., construction, lane closures, access from public roads).
Local	Traffic Control Plan	County of Imperial DPW	Traffic management for lane closures during construction.

13. Native American Consultation: Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1?

In compliance with Senate Bill 18 (SB 18; Government Code Section 65352.3), the Imperial County Planning & Development Services Department (ICPDSD) sent letters to 30 federally recognized California Native American Tribes and/or tribal representatives on December 20 and December 28, 2023, providing notification of the Project and an invitation to participate in consultation. By law, tribes have 90 days from the date of receipt of the notice to request consultation (Government Code 65352.3(a)(2)).

In compliance with Assembly Bill 52 (Chapter 532, Statutes 2014), the ICPDSD sent letters to letters to four (4) California Native American Tribes and/or tribal representatives on December 20, 2023, providing notification of the Project and an invitation to participate in consultation. Under AB-52, California Native Tribes have 30 days from the date of receipt of the notice to request consultation.

As of the date of this Initial Study, one response has been received from the Viejas Band of Kumeyaay Indians.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

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

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

**ENVIRONMENTAL EVALUATION COMMITTEE (EEC) DETERMINATION**

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

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DE MINIMIS IMPACT FINDING:  Yes  No

<u>EEC VOTES</u>	<u>YES</u>	<u>NO</u>	<u>ABSENT</u>
PUBLIC WORKS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ENVIRONMENTAL HEALTH SVCS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OFFICE EMERGENCY SERVICES	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
APCD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHERIFF DEPARTMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ICPDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

  
 \_\_\_\_\_  
 Jim Minnick, Director of Planning/EEC Chairman

2-9-2024  
 \_\_\_\_\_  
 Date:

**TABLE 3. POTENTIAL CONSULTATION AND PERMITTING REQUIREMENTS**

Jurisdiction Level	Type of Permit/Approval	Agency	Purpose
		Department of Public Works (DPW)	
Local	Encroachment Permit (Public ROW)	County of Imperial DPW	Required any time work is performed within the County Roads and ROW (e.g., construction, lane closures, access from public roads).
Local	Traffic Control Plan	County of Imperial DPW	Traffic management for lane closures during construction.

13. Native American Consultation: Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1?

In compliance with Senate Bill 18 (SB 18; Government Code Section 65352.3), the Imperial County Planning & Development Services Department (ICPDSD) sent letters to 30 federally recognized California Native American Tribes and/or tribal representatives on December 20 and December 28, 2023, providing notification of the Project and an invitation to participate in consultation. By law, tribes have 90 days from the date of receipt of the notice to request consultation (Government Code 65352.3(a)(2)).

In compliance with Assembly Bill 52 (Chapter 532, Statutes 2014), the ICPDSD sent letters to four (4) California Native American Tribes and/or tribal representatives on December 20, 2023, providing notification of the Project and an invitation to participate in consultation. Under AB-52, California Native Tribes have 30 days from the date of receipt of the notice to request consultation.

As of the date of this Initial Study, one response has been received from the Viejas Band of Kumeyaay Indians.

## PROJECT SUMMARY

### Previous Approvals

#### County of Imperial

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the *Truckhaven Geothermal Exploration Well Project*. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area as well as a 3D-Seismic Survey (see **Figure 2 – Project Area**). Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant.

All previously adopted mitigation measures presented in the 2019 IS/MND and special conditions in CUP# 18-0038 that are applicable to the propose Project are a condition of project approval and are incorporated herein by reference.

#### California State Department of Parks and Recreation

Orni 5, LLC, requested a Right of Entry permit from the California State Parks, Ocotillo Wells State Vehicular Recreation Area (SVRA) for the for the Truckhaven Geothermal Exploration Project's Seismic Survey, planned over a 23.5 square mile area, approximately 20% of the which is owned by California State Parks. On January 25, 2021, the California State Department of Parks and Recreation, as a "Responsible Agency" approved the Truckhaven Geothermal Exploration Well Project and a Right-of- Entry Permit from the Ocotillo Wells State Vehicle Recreation Area (SVRA) for the seismic survey study to support proposed geothermal exploration, as defined in the County of Imperial's Mitigated Negative Declaration (SCH #2019119033). The Right of Entry permit only applied to lands owned by California State Parks and granted approval for vehicular access to requested routes of travel (both designated and undesignated) throughout the SVRA.

The California State Department of Parks and Recreation considered the 2019 Mitigated Negative Declaration for the Truckhaven Geothermal Exploration Project, as prepared by Imperial County and determined that the project will not have a significant effect on the environment. Their Notice of Determination was filed with the Office of Planning and Research, a copy of which is included as Appendix A of this Initial Study.

#### State Lands Commission

On October 20, 2022, the California State Lands Commission, as a "Responsible Agency", approved two (2) geothermal resource leases with 5-year primary terms through October 31, 2025 on State Lands Commission, school or lieu land (owned in fee), State Reserved Mineral Interest (RMI) land, and Department of Parks and Recreation fee-owned land for the Truckhaven Geothermal Exploration Well Project. The land covered under the leases included Assessor's Parcel Numbers: 017-340-011, 017-340-018, 017-340-010, 017-340-003, 017-010-048, 017-970-014, 017-340-004, 017-010-016, 017-010-056, 017-010-044, 017-010-045, 017- 010-017, 017-010-027, 017-050-013, located in the Truckhaven area, near the Salton Sea in Imperial County).

The Truckhaven Geothermal Exploration Well Project included conducting a geophysical survey, drilling, completion, testing and monitoring up to six proposed geothermal resource wells with the parcels identified on **Table 1** of this Initial Study. The geophysical survey would construct a high-resolution image of the subsurface geologic features within the Truckhaven Geothermal Lease area to identify potential geothermal reservoirs of commercial quantity. The exploratory geothermal wells would drill into and flow test the anticipated underlying

geothermal reservoir to confirm the characteristics of the geothermal reservoir and detect if the geothermal resource is commercially viable.

Special Condition 3 (SC3) of CUP No. 18-0038 noted that Well #18-32 and Well #47-32 are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, as shown on **Table 2**, the proposed Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1;
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space;
- A "General Plan Amendment" to add oil, gas, geothermal exploration uses and major facilities relating to the generation and transmission of electrical energy as allowable uses within the West Shores/Salton City Urban Area Plan; and
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone.

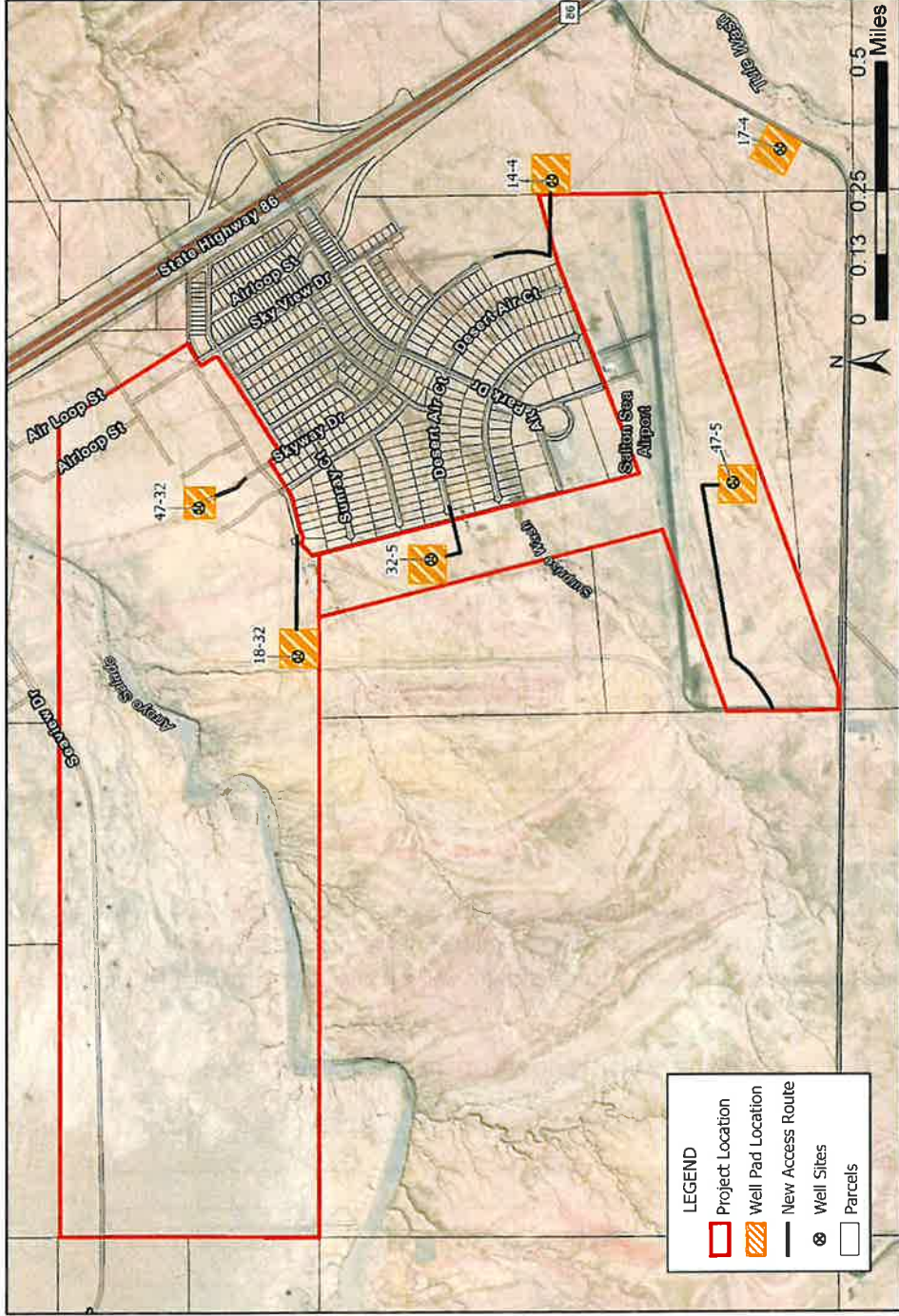
### **Project Location**

Truckhaven Geothermal Exploration Well Project (see Figure 1) would be located in the "Truckhaven Geothermal Leasing Area" analyzed by the BLM in the "Final EIS for the Truckhaven Geothermal Leasing Area" (October 2007). The six exploration wells would be built within the parcels listed on **Tables 1 and 2**. Each of the exploration well pads would be approximately 400 feet by 400 feet, for a surface area of approximately 3.67 acres per well and a total surface area of approximately 22.02 acres. The geophysical survey, completed in 2021, was conducted within a 23.5-square mile (15,040-acre) survey area in the Truckhaven Geothermal Leasing Area. The actual survey truck paths were 10 feet wide and 200 feet long, covering a total of approximately 189 acres.

The well sites are currently vacant, unirrigated, desert land that is sparsely vegetated and primarily flat. Primary highway access to the proposed well sites would be provide off SR 86 to Airpark Drive or County Dump Road (see **Figure 5**). Existing access roads would be utilized to the extent practical. The access roads would be constructed or improved with gravel and/or maintained as needed to safely accommodate the traffic required for the exploration well drilling activities.

Road beds would typically be approximately twenty (20) feet in width. **Table 4** shows the land ownership, access and land disturbance for each well site.





Proposed Well Pads and Access Routes  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 5

**TABLE 4. TRUCKHAVEN GEOTHERMAL EXPLORATORY WELLS  
PROJECT PARCELS, ACCESS, DISTURBANCE AND NEAREST RESIDENTIAL USES**

Well Site	APN	Parcel Size (Acres)	Surface Land Ownership	Well Site Access Route	Disturbance			Nearest Resident
					Well Pad (acres)	Access Road (acres)	Total (acres)	
32-5	017-970-011	209.4	Burrtec Waste Industries	Airpark Dr. to Desert Air Court. Access is ~500 feet of new dirt road.	3.67	0.23	3.90	0.34 mile
47-5	017-970-011	50	Burrtec Waste Industries	From Dump Rd. access is ~1,450 feet north on existing dirt road, then 2,500 feet east on a new dirt road.	3.67	1.45	5.12	0.44 mile
18-32	017-010-057	520	ORNI 5	Airpark Dr. to Skyway Dr. to La Guardia Ave to Starlite Dr. Access is ~600 feet west on existing road plus ~1,000 feet of new road.	3.67	0.59	4.26	0.40 mile
47-32	017-010-057	520	ORNI 5	Airpark Dr. to Skyway Dr. Access is north-northwest on ~300 feet of existing dirt road.	3.67	0.14	3.81	0.20 mile
14-4*	017-340-003	213.6	State of Calif.	Airpark Dr. to Skyway Dr. Access is ~400 feet south on existing dirt road and ~700 feet south and east on a new dirt road.	3.67	0.32	3.99	0.28 mile
17-4*	017-340-003	213.6	State of Calif.	Airpark Dr. to Desert Air Court. Access is ~500 feet of new dirt road.	3.67	0.23	3.90	0.58 mile
<b>TOTALS</b>					<b>22.02</b>	<b>2.96</b>	<b>24.98</b>	

Source: BLM, 2019.

Notes: (\*) No Zone Change or General Plan Amendment are required for these wells.

The exploration well program includes ground disturbing activities such as constructing or improving access roads, grading and leveling well pads, digging containment basins, drilling the proposed wells, and re-grading and spreading topsoil following abandonment. The duration for well pad construction, drilling, testing and cleanup is shown on **Table 5**.

**TABLE 5. ESTIMATED DAYS TO COMPLETE PROJECT ACTIVITIES**

Activity	Duration (days)
Well Pad Construction	10
Well Drilling	45
Well Testing	30
Well Clean-Up/Abandonment	5
<b>TOTAL</b>	<b>90</b>

Source: Imperial County, 2019.

## **Project Features**

### ***Construction Methods***

#### **Well Pad Layout and Construction**

One well pad will be constructed for each of the six drill sites. Each exploration well pad will be approximately 400 feet by 400 feet for a surface area of about 3.67 acres per well pad and a total of 22.02 acres for all six wellpads.

Well pad preparation activities would include clearing, earthwork, drainage and other improvements necessary for efficient and safe operation. The site selection process included minimizing cut and fill requirements. Additionally, an erosion control plan (**APM GEO-1**) shall be prepared for each well pad to identify site-specific best management practices to reduce erosion impacts, before grading to adequately control erosion during construction. However, it should be noted that the well pads would be constructed to conduct drainage to the cellar where it will be pumped to the containment basin. No off-site soil erosion is anticipated.

Construction of each well will occur sequentially such that wells would be constructed one at a time. Each proposed well site would be prepared to create a level pad for the drill rig, and a graded gravel (if needed) surface for the support equipment. Runoff from undisturbed areas around the constructed sites would be directed into ditches and energy dissipaters (if needed) around the proposed well site, consistent with California Regional Water Quality Control Board, Colorado River Basin Region (CRWQCB) and Imperial County, as appropriate, best management practices for stormwater. All machinery, drilling platforms, and oil and fuel storage would be in areas tributary to the containment basin in order to prevent the movement of storm water from these areas off of the construction site. The proposed well sites would be graded to direct runoff from the pad into the cellar which would be pumped to the containment basin.

Containment basins would be constructed at each proposed well site for the containment and temporary storage of drilling mud and cuttings and stormwater runoff from the construction site. Each containment basin would be approximately 100 feet by 250 feet by 7 feet deep and would hold roughly 420,000 gallons with a 2-foot freeboard. Each containment basin would be lined with a 40-milimeter synthetic liner, in accordance with requirements of the Colorado Regional Water Quality Control Board (CRWQCB). Compliance with California construction stormwater notification and permitting requirements would be performed for each proposed wellsite and new access road depicted on **Figure 5**).

#### **Well Drilling**

Well drilling activities include the drilling (and re drilling, if necessary) of up to 6 geothermal resource exploration wells, each to a total depth of approximately 5,000 to 7,000 ft. (into the geothermal zone) from one of the constructed well drilling pads. The hole will be drilled with a mud rotary drilling rig, as previously used in the Imperial Valley. The rig will be equipped with diesel engines, storage tanks, mud pumps, and other typical auxiliary equipment. During drilling the top of the derrick will be approximately 175 feet above the ground surface and the rig floor would be 20 to 30 feet above the ground surface.

The hole will be drilled using a gel- or polymer-based drilling fluid (drill mud). This fluid circulates the rock cuttings out of the bore hole and into the surface tanks or a reserve pit, where they are separated from the mud and collected. The mud is then recirculated. Underbalanced drilling may also be utilized in an effort to minimize water needs and to reduce risk of formation damage from drilling mud.

To construct the well, a 42-inch-diameter hole is first drilled to approximately  $\pm 80$  feet below ground level (101 feet below Kelly bushing [bkb]), and a 30-inch conductor is cemented in place. The rotary rig is then rigged up, a 30-

inch rotating head is welded on the conductor, and a 26-inch hole is drilled to approximately  $\pm 360$  feet bkb. The 22-inch casing is cemented in place, and blowout prevention equipment (BOPE) is installed.

After testing the BOPE, a 20-inch hole will be drilled to approximately  $\pm 2,200$  feet and 16-inch casing cemented in place. Following installation and testing of the BOPE, a 14-1/4-inch hole will be directionally drilled utilizing underbalanced drilling to a total depth of approximately 4,200 feet. A slotted 13-3/8-inch liner will be hung from  $\pm 2,200$  feet to 4,150 feet.

At the conclusion of drilling, a short flow test will be conducted to clean the hole and provide reservoir information. Both reservoir temperature and pressure will be measured during and after this test. The collected cuttings and drill mud will then be tested prior to being transported off site for disposal. Depending on the analytical results, the materials will be disposed at either a landfill or another approved disposal site.

Geothermal well drilling would be conducted from the constructed well pads described above. Drilling operations would take place for 24 hours per day, 7 days per week. Each geothermal well would take approximately 30 to 45 days to complete. The drilling operation would employ about 25 people in 6-person shifts. Well pad construction and drilling would generate a small number of daily one-way vehicle trips (as many as 40 or more trucks and 12 - 16 small trucks/service vehicles/worker vehicles). The California Geologic Energy Management Division (CalGEM), formerly the California Department of Oil, Gas and Geothermal Resources) regulates geothermal well drilling operations on private and state lands in California. CalGEM authorizes the drilling of the wells under a Notice of Intent<sup>1</sup>. CalGEM reviews and approves the drilling program for each well including the blowout prevention equipment (BOPE) to ensure the drilling operations are safe, protect the community, and protect land and water resources. It should also be noted that the California State Lands Commission, under the mineral extraction lease, has an independent but separate review and approval of the drilling program which includes the mud program, casing design, BOPE, etc.

BOPE includes a 30-inch weld-on rotating head (diverter) that would be used to drill the surface hole to  $\pm 360$  feet. An API 2M CSO blind ram, pipe rams, and annular preventer with rotating head will be used below  $\pm 360$  feet to total depth. BOPE testing will be witnessed by the State of California's Division of Oil, Gas, and Geothermal Resources or their designated agent.

Standard geothermal well drilling equipment and well drilling operations (listed below) would be used for the proposed Project. The wells would be drilled using a large rotary drilling rig whose diesel engines are permitted under the California Air Resources Board (CARB) Portable Equipment Registration Program (PERP). The wells would be drilled with water- or gel-based drilling mud to circulate the drill cuttings to the surface. During drilling, the top of the drill rig derrick would be as much as 175 feet above the ground surface (including non-LED aircraft safety lighting), and the rig floor could be 20 to 30 feet above the ground surface. The typical drill rig and associated support equipment (rig floor and pipe stands; draw works; derrick; drill pipe; trailers; drilling mud, fuel and water tanks; diesel generators; air compressors; etc.) would be brought to the prepared well pad on approximately 40 or more large tractor-trailer trucks. The placement of this equipment on each prepared well pad would depend on rig-specific requirements and site-specific conditions.

<sup>1</sup> Effective January 1, 2020, California's regulatory entity for oil, gas, and geothermal production has a new name: the California Geologic Energy Management Division (CalGEM).

**TABLE 6. STANDARD GEOTHERMAL WELL DRILLING EQUIPMENT**

▪ Rig floor and pipe stands	▪ Drill pipe	▪ Fuel and water tanks
▪ Draw works	▪ Trailers	▪ Diesel generators
▪ Derrick	▪ Drilling mud	▪ Air compressors

Each geothermal well would also be drilled and cased to the design depth of approximately 5,000 to 7,000 feet. A geothermal well drilling and completion program for each well would be submitted to CalGEM. BOPE inspected and approved by CalGEM would be utilized while drilling below the surface casing. It should be noted that the California State Land Commission, under the mineral extraction lease, has an independent but separate review and approval of the drilling program, which includes the mud program, casing design, BOPE, etc.

Well casing (typically 20") would be cemented to a depth of approximately 1,800 feet below Kelly bushing (kbb). A slotted liner (typically 9 5/8 inch) would be hung from approximately 1,750 feet to near total depth. All these numbers are subject to change and would be formalized when the drilling programs are submitted to CalGEM or BLM, as appropriate.

The well bore would be drilled using non-toxic, temperature stable gel-based drilling mud or gel and polymer drilling fluid to circulate the rock cuttings to the surface where they are removed from the drilling mud. The mud is then recirculated. A containment basin would be excavated and rock cuttings would be captured in the containment basin. Additives would be added to the drilling mud as needed to prevent corrosion, increase mud weight, and prevent mud loss. The inside diameter of the wells would be approximately 30 inches at the top and would telescope with depth. The typical design depth of both the production and injection wells is projected to be about 5,000 to 7,000 feet. Each geothermal well would be drilled and cased to the design depth or the depth selected by the project geologist. The final determination of well depth and well completion would be based on geological and reservoir information obtained as wells are drilled.

**Drill Pad and Access Road Aggregate**

Aggregate required for well pad (estimated at 5,926 cubic yards per well pad) and access road construction would likely be purchased from the Aggregate Products Inc. Salton Sea quarry facility, located approximately two (2) miles west of the town of Salton Sea Beach and 10 miles north-northwest of the Project. It is assumed the Project would require six vendor trucks per day to deliver equipment, and 20 worker trips per day.

**Water Requirements and Sources**

Water required for well pad and access road construction and well drilling would typically average about 50,000 gallons per day. Water necessary for these activities would be purchased from the Coachella Valley Water District via a fire hydrant. Water would be picked up from the source and delivered over existing roads to each construction location or drilling site by a water truck which would be capable of carrying approximately 4,000 gallons per load. This would result in the requirement of approximately 13 truck trips per day to accommodate water needs; and it is anticipated that the fire hydrant from which the water would be obtained would be located in Salton City, approximately 1 mile to the northeast of the project area. The water would be used for road grading, construction and dust control.

**Well Testing**

Wells would be initially flow tested while the drill rig is still over the well. The residual drilling mud and cuttings would be flowed from the well bore and discharged into the containment basin. This cleanout flow test may be followed by one or more short-term flow tests, each lasting from several hours to a day and also conducted while

the drill rig is over the well. These tests typically consist of producing the geothermal well into portable steel tanks brought onto the well site while monitoring geothermal fluid temperatures, pressures, flow rates, chemistry and other parameters. Steam and noncondensable gasses, such as hydrogen sulfide and carbon dioxide, from the geothermal fluid would be discharged to the atmosphere. Produced fluid from the short-term flow test would be pumped back into the well.

An injectivity test could also be conducted by injecting the produced geothermal fluid from the steel tanks back into the well and the geothermal reservoir. The drill rig would likely be moved from the well site following completion of these short-term test(s). Following the short-term test(s), all equipment would be removed and the well shut in. Temperature profiles of the wellbore would be measured during the shut-in period.

After the rig has moved, a longer-term test could be conducted using a test facility consisting of approximately ten, 21,000-gallon steel tanks, injection pumps, coil tubing, nitrogen pumps, filtration units, flow meters, recorders, and sampling apparatus. This test could last for 30 days. Steam and noncondensable gasses from the geothermal fluid would typically be discharged to the atmosphere. The remaining geothermal fluid would be injected back into either the well from which it was produced or into a second well via temporary pipeline routed above ground along the well site access roads or, if following access roads is not feasible, along other previously disturbed routes (see **Figure 5**).

#### ***Geothermal Well Monitoring***

Following completion of the short-term geothermal well testing, all of the drilling and testing equipment would be removed from the site. The surface facilities remaining on the site would typically consist of several valves on top of the surface casing; which would be chained and locked and surrounded by an approximately 12-foot by 12-foot by 6-foot high fence to prevent unauthorized access and vandalism. Pressure and temperature sensors may be installed in the hole at fixed depths to monitor any changes in these parameters over time. A temperature profile of the well may also be run. This monitoring may be continued indefinitely.

#### ***Abandonment Program***

After drilling operations are completed on each well, the liquids from the containment basin would either be evaporated, pumped back down the well, and/or disposed of in accordance with the requirements of the CRWQCB or Imperial County Public Health Department, as applicable.

The solid contents remaining in each containment basin, typically consisting of non-hazardous, non-toxic drilling mud and rock cuttings, would be tested as required by the CRWQCB. The solids would be removed and disposed of in a waste disposal facility authorized by the CRWQCB to receive and dispose of these materials. If allowed they may be used as daily cover at the nearby landfill. After the materials in the containment basins have been removed the containment basin area may be reclaimed depending on if there may be a need for its use in the future.

Upon the completion of each well drilled and flow-tested, a decision would be made by the Applicant regarding the commercial potential of each well. If a well is judged by the Applicant to have any commercial potential, well operations would likely be suspended pending application for and receipt of regulatory approvals to place the well into commercial service through a new pipeline to a new geothermal power plant or direct use facility. The well would likely continue to be monitored while these approvals are being processed. If a well is judged to not have commercial potential, it may continue to be monitored, or it may be abandoned in conformance with the well abandonment requirements of the CalGEM. Abandonment of a geothermal well involves plugging the well bore with clean drilling mud and cement sufficient to ensure that fluids would not move across into different aquifers.

The well head (and any other equipment) would be removed, and the casing cut off at least 6 feet below ground surface.

Following abandonment of the well, the well site itself would be reclaimed, typically by re-grading the entire well pad and access road area to approximately the same topography as existed prior to construction of the site, including the spreading the topsoil (if any) over the surface. Revegetation would be in conformance with the requirements of the surface managing agency.

**Applicant Proposed Measures**

As part of the proposed Truckhaven Geothermal Exploration Project, ORNI 5, LLC (Applicant) identified 19 Applicant-Proposed Measures Design Features and Best Management Practices (APMs) that it would implement during construction operation, abandonment, and/or reclamation of the Truckhaven Geothermal Exploration Project to reduce or avoid impacts. ORNI 5, LLC would conduct the construction, operation, abandonment and reclamation activities of the Truckhaven Geothermal Exploration Project in accordance with the APMs listed in **Table 7**. These APMs are supplemented by the mitigation measures (MMs) identified as part of this environmental analysis.

**TABLE 7. APPLICANT PROPOSED MEASURES**

<b>APM</b>	<b>Description</b>
<b><i>Biological Resources APMs</i></b>	
<b>APM-BIO-1</b> Biological Monitoring	A qualified biologist(s) shall monitor all construction activities to ensure that standard and special status species-specific avoidance and minimization recommendations are adhered to. The monitor will retain stop work authority in the event there is the likelihood of eminent take of special status species. The biological monitor shall conduct a general preconstruction survey no more than 14 days prior to the start of construction to verify that no special status species are in the project area or its buffers. The monitor shall also conduct a daily survey in and around work areas before activities start. If special status species are observed all work would be stopped and the authorized biologist would consult with California State Parks, CDFW, and USFWS on how to proceed.
<b>APM-BIO-2</b> Worker Education Program	A worker education program shall be prepared and presented to all employees working on the Project in special species habitat. The education program shall include identification of target species and their habitats, any project mitigation measures and stipulations, reporting requirements, and penalties for failure of compliance.
<b>APM-BIO-3</b> Nesting Birds Survey	Should construction activities occur between February 15 and August 15, the time period typically referenced in California for the general bird nesting season, preconstruction nesting surveys shall be conducted in the project area by a qualified biologist within two weeks of the start of construction. If no active bird nests are found within this area, no further mitigation is required. If an active nest is found, a buffer shall be instated around the nest if it belongs to a non-listed or migratory bird. If the nest belongs to a listed or fully-protected species, a larger buffer shall be instated around the nest, at a distance approved prior to construction activities.
<b>APM-BIO-4</b> Burrow Avoidance	Avoid burrows that may be utilized by special status wildlife species with a minimum buffer of 20-feet from burrows suitable for flat-tailed horned lizard and a minimum buffer of 30-feet from burrows suitable for burrowing owls.
<b>APM-BIO-5</b> Flat-Tailed Horned Lizard Relocation	If flat-tailed horned lizards are observed within the construction area, the qualified biological monitor, with prior approval through project acquired permits or permissions, shall relocate the individual out of the construction area, adjacent to where it was moved from.
<b>APM-BIO-6</b> Burrowing Owls	If burrowing owls are observed within the Project area prior to or during construction activities, occupied burrows shall not be disturbed during the owl nesting season, February 1 and August 31. If burrows are found, the appropriate California Department of Fish and Wildlife (CDFW)-recommended buffer, or a buffer deemed appropriate by the qualified biological monitor, shall be instated until occupancy status is determined. If the buffer cannot be maintained during the non-breeding season,

**TABLE 7. APPLICANT PROPOSED MEASURES**

<b>APM</b>	<b>Description</b>
	owls may be evicted from the burrows using accepted methodology as approved by resource agencies. Eviction shall not occur during the breeding season.
<b>APM-BIO-7</b> Special Status Plant Species Protection	Avoid special status perennial plant species with a minimum buffer of 5 to 10 feet, depending on the root structure and as determined by the biological monitor. All plant species should be avoided to the extent possible.
<b>APM-BIO-8</b> Well Pad Access Protection	Access to proposed well sites shall be via pre-existing access routes, to the greatest extent possible, and the work area boundaries shall be delineated with staking, flagging, or other comparable markings to minimize surface disturbance associated with vehicle straying. Signs and/or fencing shall be placed around the project area to restrict access to project-related vehicles. Markings should be removed upon completion of work
<b>APM-BIO-9</b> Noxious Weeds Management	Project-related equipment shall be washed prior to entering the project area for the first time to reduce the chance of transporting noxious weed seeds from outside the area.
<b>Cultural Resources APMs</b>	
<b>APM-CUL-1</b> Cultural Resource Monitoring and Discovery Plan	The Applicant shall, prior to construction, prepare a monitoring and discovery plan that identifies procedures for monitoring and implementation of a discovery plan. Consistent with the monitoring and discovery plan prepared for the Project, the Applicant shall retain qualified archaeological monitors for all ground disturbing activities associated with the development of access roads and construction of the drill pads. If a significant cultural resource site is found during ground disturbing activities associated with well pad or access road construction the Project features shall either be moved, or the resource shall be protected in place, or data recovery shall be initiated, consistent with the monitoring and discovery plan.
<b>APM-CUL-2</b> Worker Resources Awareness Training	All workers involved with ground disturbing activities associated with the Project shall undergo worker resources awareness training prior to being allowed to work in the Project area. The Imperial County Planning and Development Services Department (ICPDSD) shall review and approve the worker training content in advance of any project work on Well #32-5; Well #47-5; Well #18-32; and Well #47-32.
<b>Geology and Soils/ Paleontological Resources APMs</b>	
<b>APM-GEO-1</b> Erosion Control Plan	An erosion control plan shall be prepared and approved before grading to adequately control erosion during construction.
<b>APM-PAL-1</b> Paleontological Resource Mitigation Plan	Prior to the commencement of ground-disturbing activities, a qualified professional paleontologist shall be retained to prepare and implement a Paleontological Resource Mitigation Plan for the Project. The Plan shall address the recommended approach to additional specimen collection, the specific locations and intensity of monitoring recommended for each geologic unit, and monitoring intensity. Paleontological monitoring shall be required for all ground disturbing activities within the previously undisturbed Arroyo Diablo Formation, Borrego Formation, Brawley Formation, Lake Cahuilla deposits, and Quaternary older alluvium, which underlies the Project area. Monitoring will entail the visual inspection of excavated or graded areas and trench sidewalls. In the event that a paleontological resource is discovered, the monitor shall have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and collected.
<b>APM-PAL-2</b> Paleontological Resource Environmental Awareness Training	All Project personnel and other on-site workers shall receive environmental awareness training on paleontological resources prior to the start or continuation of any elements of the Project that include ground disturbing activities. The training shall be conducted by a qualified, BLM and California Department of Parks and Recreation (DPR) permitted paleontologist and shall provide a description of the fossil resources that may be encountered in the project area, outline steps to follow in the event a fossil discovery is made, and provide contact information for the Project Paleontologist. The training may be conducted concurrent with other environmental training (e.g., cultural and natural resources awareness training, safety training, etc.) and may also be videotaped or presented in an informational brochure for future use by field personnel not present at the start of the Project. The workers should



**TABLE 7. APPLICANT PROPOSED MEASURES**

<b>APM</b>	<b>Description</b>
	be informed that any unlawful collection of paleontological resources may be subject to a misdemeanor, a fine, or both.
<b>Hazards and Hazardous Materials APMs</b>	
<b>APM-HAZ-1</b> Solid Waste Management	Solid waste materials (trash) shall be deposited at an authorized landfill by a disposal contractor. Portable chemical sanitary facilities shall be used by all personnel. These facilities shall be maintained by a local contractor. Diesel fuel, lubricants, drilling mud and drilling mud additives would be transported to, stored on and used by the Project at the proposed well sites. The Project would conform to federal and state hazardous materials handling requirements.
<b>APM-HAZ-2</b> Notification Of Drilling Operations	Burrtec Waste Industries, the owner of the Salton City Airport, shall be given prior notification of all the drilling operations for each proposed exploratory wells located within 1 mile of the airport. Notices to the Federal Aviation Administration (FAA) are also required, and shall be delivered, and the drilling rigs shall be properly lighted, as required by the FAA, to avoid air traffic hazards.
<b>APM-HAZ-3</b> Blow Out Prevention Equipment (BOPE) Measures	The Project has adopted blowout prevention measures in conformance with BLM and CalGEM requirements to minimize the potential for a well to "blow out," or flow uncontrollably. Should the well start to flow hot or cold water, the drilling company would use heavier drilling mud or other specialized drilling materials (which would be stored on site) to stop the flow.
<b>Noise APMs</b>	
<b>APM-NOI-1</b> Construction Noise Reduction	All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer;
<b>APM-NOI-2</b> Activities Limitation	All non-essential well drilling equipment and truck deliveries shall be limited to operating during the allowable construction times of between 7 a.m. and 7 p.m. Mon. thru Fri. and between 9 a.m. and 5 p.m. on Sat.
<b>APM-NOI-3</b> Placement of portable office and any storage containers	The portable office and any storage containers used during the well drilling phase shall be placed between the drilling equipment and nearest home, in order to effectively act as a sound wall and provide attenuation to the nearest home

## EVALUATION OF ENVIRONMENTAL IMPACTS:

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

## I. AESTHETICS.

Except as provided in Public Resources Code Section 21099, would the project:

- a) Have a substantial adverse effect on a scenic vista?

**a) Less Than Significant With Mitigation Incorporated.** Imperial County includes over 4,597 square miles between Riverside County to the north, Arizona to the east, Mexico to the south, and San Diego County to the west. The County's visual character varies greatly and includes natural scenic visual resources such as deserts, sand dunes, mountains, and the Salton Sea. Visual character within Imperial County is defined as low, moderate, and high. Areas with a moderate to high value for maintenance of visual quality could represent opportunities for conservation and open space areas (County of Imperial, 2016). The proposed geothermal exploratory wells are located within the West Shores/Salton City Urban Area Plan (2000), west of State Route 86 and east of the northwest boundary of the Ocotillo Wells State Vehicular Recreation Area (SVRA) (**Figure 2 Project Area**).

Under the Desert Renewable Energy Conservation Plan (DRECP); Land Use Plan Amendment (LUPA), the BLM lands in the vicinity of the proposed Project are designated as a Visual Resource Management Class Four (IV) which allows for industrial scale development (BLM, 2019). They have a *C - 11 or Less Total Score for Scenic Quality* and their *Sensitivity Level Overall Rating is Maintenance of Visual Quality has Low Value* (BLM, 2023). The most visibly apparent human-made structures and uses in the Project vicinity include residential and light industrial structures, the Salton Sea Airport, an Imperial Irrigation District (IID) transmission line, an IID H-frame structure east of the Project area, the Salton City Solid Waste landfill to the southwest, State Highway 86 and County Road S22 (Borrego Salton Sea Way).

Some scenic qualities of the landscape have been diminished by extensive off highway vehicle (OHV) use associated with the Ocotillo Wells SVRA. OHV activity is limited to existing roads and trails only in that portion of the Ocotillo Wells SVRA nearest Project area. Nevertheless, extensive road and trail networks that contrasted with the natural color of the surrounding landscape; tire tracks visible nearly everywhere; slide slope trails carved on steep slopes that caused landform contrast; overly sparse vegetation due to ground compaction; and litter in some places was recorded in the 2019 *Environmental Assessment for the Truckhaven Geothermal Exploration Well Project* prepared by BLM (BLM, 2019).

Two scenic viewpoints along the Borrego Salton Sea Way (S-22) overlook the proposed Project area: Badlands Viewpoint and Calcite Mine Road Look Out. These viewpoints are approximately 10 miles northwest of the proposed Project. The Ocotillo Wells State Vehicular Recreation Area (SVRA) is located adjacent the Project area to the west and south. Two other popular viewpoints, Tectonic Gorge and Truckhaven overlook, are located within the Ocotillo Wells SVRA and are less than five miles northwest of the Project area.

The drilling rig derrick for the exploratory geothermal wells for which proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would be required, would be as much as 175 feet above the ground surface and the rig floor would be 20 to 30 feet above the ground surface and may be visible from State Highway 86, County Route S22, Pole Line Road and County Dump Road. There is also a radio tower associated with the Salton Sea Airport currently in the viewshed.

There are six residences in the area, scattered around the airport subdivision, with the next closest residences ranging from 0.20 miles to 0.58 miles from the proposed well pads (**Table 4**). During flow testing, geothermal steam and water vapor plumes up to several hundred feet high (depending on the weather conditions during the flow test) could also be visible from the roads and nearby residences. Well drilling operations would be temporary and short term, taking an average of 30 to 45 days to drill. Following the completion of drilling and flow testing there would be essentially no visual impact, as the well surface equipment is less than 20 feet tall.

Drilling and flow tests would be conducted 24 hours a day, and the lighted drill rigs and test equipment would be visible at night. However, light sources during drilling and flow testing would be confined to the drill rig and other operational areas as required for safety. The light from the drill site during drilling and flow testing would be focused downwards and inwards, and should not be directly visible at a distance.

To ensure impacts to visual resources would be maintained below a level of significance, mitigation measures **MM VIS-1**, identified in the Truckhaven Geothermal Leasing Area EIS would be implemented.

- b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

**b) No Impact.** The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the scenic corridor. No State scenic highways have been designated in Imperial County; therefore, no impact associated with a scenic highway would occur.

- c) 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?

**c) Less Than Significant.** The Project includes a proposed zone change and general plan amendment to facilitate the construction, drilling, and testing of six geothermal exploratory wells in an undeveloped area of Imperial County. The construction and drilling of the wells would involve the erection of a drilling rig derrick that would be as much as 175 feet above the ground surface and the rig floor would be 20 to 30 feet above the ground surface. There would also be construction vehicles involved in the development of the well pads and access roads. These impacts would be short-term, approximately 2 to 3 months, and would not result in a long-term substantial change the character of the area. As discussed above, the exploratory wells would be within the viewsheds of four overlooks within Ocotillo Wells SVRA and the drill rig would be visible in the background for approximately one month. The construction of the well pads would result in minor changes in the existing visual character of portions of the project area. However, the project area is located within the Truckhaven Geothermal Leasing Area and wells similar to those included in the Project are currently active in area. In addition, there are no existing scenic resources on the proposed Project site. Therefore, the proposed Project would result in a less than significant impact to the existing visual character or quality of the site and its surroundings. Implementation of Mitigation Measure **MM VIS-1** would further reduce this impact.

- d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

**d) Less Than Significant.** Drilling activities would occur 24 hours per day for up to 30 days. Construction related lighting would be required during this period. In accordance with Special Condition 20 of CUP#18-0038, impacts from night lighting shall be minimized during construction activities by using shielded, directional lighting that is pointed downward to avoid illumination of natural areas and the night sky. During well drilling operations, night lighting shall be used only to the extent necessary for worker safety and security purposes. All motion or heat activated lighting shall be shielded and directed downward.

In addition, the top of the drill rig derrick would be as much as 175 feet above the ground surface; non-LED aircraft safety lighting, in accordance with Federal Aviation Administration requirements, would be installed atop the drill rig derrick. Once drilling is complete this lighting would no longer be needed and would be eliminated. Additionally, temporary construction lighting would be used for illuminating the proposed well sites during construction. The proposed Project does not include the addition of substantial lighting or glare producing components. Ambient lighting and glare in the nearby areas would not significantly increase above existing conditions. Impacts would be short-term, 2 to 3 months, and less than significant.

**Mitigation**

**MM-VIS-1:** All facilities, including geothermal production and injection pipelines, wellheads, powerplants, maintenance buildings, etc. would be painted a color that blends into the natural setting.

**II. AGRICULTURAL AND FOREST RESOURCES.**

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

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

**a) No Impact.** According to the 2020 Farmland Mapping and Monitoring Program Map for Imperial County, Well #32-5; Well #47-5; Well #18-32; and Well #47-32 (APNs 017-970-011 and 017-010-057) are outside of the area mapped by the Department of Conservation Farmland Mapping and Monitoring Program (FMMP) and does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance (California Dept. of Conservation, 2023a). No impacts related to the conversion of FMMP farmlands to non-agricultural use would occur.

- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

**b) No Impact.** Well #32-5 and Well #47-5 are zoned S-1 (Open Space/Recreation) which is characterized by low intensity human utilization and small scale recreation related uses. Well# 18-32 and Well #47-32 are zoned R-1-L.5 for low density residential use. Agricultural uses are not allowed within the S-1 or R-1-L.5 zones (County of Imperial, 2017). Additionally, the project area is not covered under a Williamson Act contract (California Dept. of Conservation, 2023b). For these reasons, the proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would not conflict with existing zoning for agricultural use, or a Williamson Act contract. No impacts are identified for this issue area.

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

**c) No Impact.** Well #32-5 and Well #47-5 are zoned S-1 (Open Space/Recreation) and Well #18-32 and Well #47-32 are zoned R-1-L.5 and do not support forest land, timberland, or timberland production. The proposed Project would not conflict with existing zoning for, or cause rezoning of forestland or timberland. No impacts are identified for this resource area.

- d) Result in the loss of forest land or conversion of forest land to non-forest use?

**d) No Impact.** Well #32-5 and Well #47-5 are zoned S-1 (Open Space/Recreation) and Well# 18-32 and Well #47-32 are zoned R-1-L.5. All well sites are vacant of development. The well sites are and their associated access routes are not located on land that is zoned or used for forest land. Therefore, the proposed Project would not result in the loss of forest land nor the conversion of forest land to non-forest use. No impacts are identified for this resource area.

- 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?

**e) No Impact.** The proposed Project does not involve changes in the existing environment which, due to their location or nature, would result in the conversion of neighboring farmland to non-agricultural use. The well sites are surrounded by low density residential, light industrial uses and open space/recreational areas. The nearest agricultural lands occur approximately six mile to the southeast, across State Route 86/Highway 86. The proposed Project would not result in the conversion of farmlands off-site to non-agricultural uses. No impacts are identified for this issue area.

### III. AIR QUALITY.

This section summarizes the existing air quality setting and potential effects from project implementation as presented in the adopted Initial Study and Mitigated Negative Declaration (IS/MND) for the *Truckhaven Geothermal Exploration*

*Well Project* and approved Conditional Use Permit (CUP) No. 18-0038 (County of Imperial, 2019). Construction-related air quality modeling was performed as part of the 2019 IS/MND and the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 model output was included as Appendix A.

The proposed wells sites are located on the southwest side of Salton City, which is an unincorporated area located in the western portion of Imperial County. The proposed well sites are located within the Salton Sea Air Basin (Air Basin), and air quality regulations are administered by the Imperial County Air Pollution Control District (ICAPCD). The ICAPCD implements the programs and regulations required by the Federal and state Clean Air Acts.

### ***Atmospheric Setting***

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographical features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with physical features of the landscape to determine their movement and dispersal, and consequently, their effect on air quality. The combination of topography and inversion layers generally prevents dispersion of air pollutants in the Air Basin. The following description of climate of Imperial County was obtained from *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter less than 10 Microns in Diameter*, prepared by ICAPCD, October 23, 2018.

The climate of Imperial County is governed by the large-scale sinking and warming of air in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms, except in the winter, when it is weakest and located farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal areas. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall. The sun shines, on the average, more in Imperial County than anywhere else in the United States.

Winters are mild and dry with daily average temperatures ranging between 65- and 75-degrees Fahrenheit (°F). During winter months it is not uncommon to record maximum temperatures of up to 80 °F. Summers are extremely hot with daily average temperatures ranging between 104 and 115 °F. It is not uncommon to record maximum temperatures of 120 °F during summer months.

The flat terrain of the valley and the strong temperature differentials created by intense solar heating produce moderate winds and deep thermal convection. The combination of subsiding air, protective mountains, and distance from the ocean all combine to severely limit precipitation. Rainfall is highly variable with precipitation from a single heavy storm able to exceed the entire annual total during a later drought condition. The average annual rainfall is just over three inches with most of it occurring in late summer or mid-winter.

Humidity is low throughout the year, ranging from an average of 28 percent in summer to 52 percent in winter. The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50 to 60 percent but drops to about 10 percent during the day.

The wind in Imperial County follows two general patterns. Wind statistics indicate prevailing winds are from the west-northwest through southwest; a secondary flow maximum from the southeast is also evident. The prevailing winds from the west and northwest occur seasonally from fall through spring and are known to be from the Los Angeles area. Occasionally, Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 miles

per hour (mph) and this occurs most frequently during the months of April and May. However, speeds of less than 6.8 mph account for more than one-half of the observed wind measurements.

**Regulatory Setting**

The Project site lies within the Salton Sea Air Basin, which is managed by the ICAPCD. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone, sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), inhalable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), and lead. The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Areas are classified under the Federal Clean Air Act as either “attainment” or “nonattainment” areas for each criteria pollutant, based on whether the NAAQS have been achieved or not. Attainment relative to the state standards is determined by the California Air Resources Board (CARB). The Salton Sea Air Basin has been designated by the Federal Environmental Protection Agency (EPA) as a nonattainment area for ozone(O<sub>3</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub>. Currently, the Air Basin is in attainment with the NAAQS for CO, SO<sub>2</sub>, and NO<sub>2</sub>. **Table 8** (presents the designations and classifications applicable to the proposed Project area.

**TABLE 8: DESIGNATIONS/CLASSIFICATIONS FOR THE PROJECT AREA**

Pollutant	National Classification	California Standards <sup>2</sup>
Ozone (O <sub>3</sub> ) - 2008 Standard	Non-Attainment (Moderate)	Non-Attainment
Particulate Matter (PM <sub>10</sub> )	Non-Attainment (Serious)	Non-Attainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Non-Attainment (Moderate)	Attainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO <sub>2</sub> )	Attainment	Attainment
Sulfur Dioxide (SO <sub>2</sub> )	Attainment	Attainment

Sources: Imperial County, 2019 (Appendix A); <https://ww3.arb.ca.gov/regist/adm/adm.htm>; and <https://ww3.arb.ca.gov/planning/sip/planarea/imperial/staffreport121318.pdf>

The ICAPCD has addressed each of three nonattainment pollutants in separate State Implementation Plans (SIPs). For ozone the most current SIP is the *Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard* (2017 Ozone SIP), prepared by ICAPCD, September 2017, which was prepared to detail measures to reduce ozone precursors (i.e. ROG and NO<sub>x</sub>) within the County in order to meet the 2008 NAAQS for 8-hour ozone standard of 0.075 parts per million (ppm) by July 20, 2018. Although the Ozone 2017 SIP demonstrates that the County met the 8-hour ozone standard 0.075 ppm by the July 20, 2018, requirement, it should be noted that in 2015 the EPA further strengthened its 8-hour ozone standard to 0.070 ppm, which will require an updated SIP for the County to meet the new ozone standard.

Since PM<sub>10</sub> in the County has met the 24-hour NAAQS, other than for exceptional events that include storms as well as from substantial PM<sub>10</sub> concentrations blowing into the County from Mexico, the most current PM<sub>10</sub> plan is the *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter less than 10 Microns in Diameter* (2018 PM<sub>10</sub> Plan), prepared by ICAPCD, October 23, 2018. The 2018 PM<sub>10</sub> Plan shows that the monitoring of PM<sub>10</sub> in



the County found that other than exceptional events, no violation of the 24-hour PM<sub>10</sub> NAAQS of 150 µg/m<sup>3</sup> occurred over the 2014 to 2016 time period. As such, the ICAPCD has requested the EPA to redesignate the Air Basin to maintenance. The redesignation is anticipated to occur sometime in the year 2020.

For PM<sub>2.5</sub> the most current SIP is the *Imperial County 2018 Annual Particulate Matter Less Than 2.5 Microns in Diameter State Implementation Plan* (Imperial County, 2018a), prepared by ICAPCD, April 2018, which was prepared to detail measures to meet the 2012 NAAQS for annual PM<sub>2.5</sub> standard of 12 µg/m<sup>3</sup> by the end of 2021 for the portion of Imperial County (approximately from Brawley to Mexico border) that is designated nonattainment. The PM<sub>2.5</sub> Plan found that the only monitoring station in the County that has recorded an exceedance of PM<sub>2.5</sub> is the Calexico Monitoring Station that is likely caused by the transport of PM<sub>2.5</sub> across the Mexico border. It is anticipated that the ICAPCD will submit a redesignation request for PM<sub>2.5</sub> in the near future.

Although ICAPCD is responsible for air quality planning efforts in the County, it does not have the authority to directly regulate air quality issues associated with new development projects. Instead, this is controlled through local jurisdictions in accordance to CEQA. In order to assist local jurisdictions with air quality compliance issues, the ICAPCD has prepared the *CEQA Air Quality Handbook* (ICAPCD, 2017). The purpose of the Handbook is to assist lead agencies in evaluating a project's potential air quality impacts and provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant and how to mitigate these impacts. The Handbook provides the following standard measures for dust control and use of combustion equipment that all construction projects in the Air Basin are required to implement:

- All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust
- All onsite and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
- All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
- The transport of Bulk Materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.
- All Track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an Urban area.
- Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.
- The construction of any new Unpaved Road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall

be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

- Use alternative-fueled or catalyst-equipped diesel construction equipment, including all off-road and portable diesel powered equipment.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)

Since the Project site is located in an area that is known to experience high winds, the Project would also need to implement the ICAPCD's adopted suite of rules, known as Regulation VIII, to address fugitive dust emissions within Imperial County. as noted in the High Wind Exceptional Event Fugitive Dust Mitigation Plan for Imperial County (ICAPCD, 2018b). The High Wind Plan (page 12) notes that Regulation VIII consists of seven interrelated rules (Rules 801 through 806) adopted by ICAPCD to limit emissions of PM<sub>10</sub> from anthropogenic fugitive dust sources in Imperial County. Additional measures include the adoption of a Smoke Management Plan (SMP), and the identification of additional mitigation measures or conditions imposed through the California Environmental Quality Act (CEQA) process.

The Project will utilize off-road diesel equipment, listed in **Table 6**, which will emit air emissions. Therefore, an ICAPCD Authority to Construct and Permit to Operate permit under Rule 201 shall be required for construction, testing and operations of well pad and associated access road. The Permit will require the applicant to demonstrate that all off-road equipment utilized are registered with CARB or the ICAPCD. The Permit also requires the applicant to quantify the emissions created from the specific equipment utilized during construction of the Project in order to ensure that the air emissions created from the off-road equipment utilized during construction activities are within the ICAPCD standards.

### ***Monitored Air Quality***

The air quality at any site is dependent on the regional air quality and local pollutant sources. The air quality at any location in the Air Basin is determined by the release of pollutants throughout the Air Basin as well as from air pollutants that travel from the coastal areas and Mexico to the Air Basin. The ICAPCD operates a network of monitoring stations throughout the County that continuously monitor ambient levels of criteria pollutants in compliance with federal monitoring regulations.

Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the proposed Project site have been used: Niland – English Road Monitoring Station (Niland Station) and El Centro – 9<sup>th</sup> Street Monitoring Station (El Centro Station).

The Niland Station is located approximately 23 miles east of the proposed well sites at 7711 English Road, Niland and the El Centro Station is located approximately 38 miles southeast of the proposed well sites at 150 9<sup>th</sup> Street, El Centro. It should be noted that due to the air monitoring stations distances from the proposed wells sites, recorded air pollution levels at the air monitoring stations reflect with varying degrees of accuracy local air quality conditions at the proposed

Project site. **Table 9** below presents the most current composite of gaseous pollutants monitored from 2020 through 2022.

**TABLE 9: AMBIENT AIR QUALITY MONITORING SUMMARY (NILAND STATION)**

Air Pollutant	2020	2021	2022
Ozone (O <sub>3</sub> ) <sup>1</sup>			
Max 1 Hour (ppm)	0.054	0.065	0.070
Days > CAAQS (0.09 ppm)	0	0	0
Max 8 Hour (ppm)	0.045	0.055	0.062
Days > NAAQS (0.070 ppm)	0	0	0
Days > CAAQS (0.070 ppm)	0	0	0
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>2</sup>			
Max 1 Hour (ppb)	44.8	55.8	51.3
Days > NAAQS (100 ppb) Days > CAAQS (180 ppb)	0	0	0
Particulate Matter (PM <sub>10</sub> ) <sup>1</sup>			
Max Daily California Measurement	241.3	218.2	474.4
Days > NAAQS (150 µg/m <sup>3</sup> )	1	4	9.2
Days > CAAQS (50 µg/m <sup>3</sup> )	68.9	86.0	111.7
State Average (20 µg/m <sup>3</sup> )	35.9	35.8	48.6
Particulate Matter (PM <sub>2.5</sub> ) <sup>2</sup>			
Max Daily National Measurement	28.5	19.1	30.6
Days > NAAQS (35 µg/m <sup>3</sup> )	0	0	0
National Average (12 µg/m <sup>3</sup> )	9.7	8.3	8.8
State Average (12 µg/m <sup>3</sup> )	9.8	8.3	8.9

Notes:

> = exceed ppm = parts per million ppb = parts per billion µg/m<sup>3</sup> = micrograms per cubic meter CAAQS = California Ambient Air Quality Standard NAAQS = National Ambient Air Quality

ND = Insufficient or No Data **Bold** = exceedance

<sup>1</sup> Measurement taken from Niland Mesa Station

<sup>2</sup> Measurement taken from El Centro Station Source: <http://www.arb.ca.gov/adam/>

### Impact Analysis

The following analysis is broken out by a discussion of potential impacts during construction of the project followed by a discussion of potential impacts during operation of the project.

### Exploratory Wells:

#### Construction Emissions

Construction of the exploratory wells would create air emissions primarily from equipment exhaust and fugitive dust. The air emissions from the exploratory wells were calculated in the 2019 IS/MND using CalEEMod (County of Imperial 2019, Appendix A). Construction activities for the Project were initially anticipated to begin in early 2020. The construction start date has now be changed to early 2024. As noted on **Table 5**, each well would take approximately

two months to complete, or approximately one year for all six wells as it is anticipated that after a well is completed the crew would move to the next well location, so no concurrent well construction activities are anticipated.

It should also be noted that the project applicant is also proposing four additional exploratory wells on federal land that is being processed under a separate environmental analysis; however, similar to the proposed Project, the same well crew that would complete the proposed six wells would also complete the four wells on federal land and will complete one well at a time. As such, no cumulative construction emission impacts are anticipated to occur from both projects. The anticipated construction phases for each well location would include: (1) Well pad preparation; (2) Well drilling; (3) Well testing; and (4) Well clean-up.

The ICAPCD has prepared the *CEQA Air Quality Handbook* (ICAPCD, 2017), in order to assist lead agencies in making a determination of significance for air quality impacts. The screening criteria in the CEQA Handbook can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA.

**Table 10** shows the ICAPCD screening thresholds for both construction and operations.

**TABLE 10: ICAPCD THRESHOLDS OF SIGNIFICANCE**

Phase	Pollutant Emissions (Pounds/Day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Construction	75	100	550	150	150	550
Operation	137	137	550	150	150	550

Notes:

(1) Since the ICAPCD does not provide a construction threshold for SO<sub>2</sub> and PM<sub>2.5</sub>, the operation threshold has been utilized to provide a conservative analysis.

Source: ICAPCD, 20107. Available at <https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf>.

**Table 11** shows the estimated worst-case summer or winter daily emissions that would be predicted from each phase of the Project for one well site, which is based on the construction equipment anticipated to be used.

**TABLE 11: CONSTRUCTION-RELATED CRITERIA POLLUTANT EMISSIONS FROM ONE WELL SITE**

Activity	Pollutant Emissions in pounds/day					
	ROG	NOX	CO	SO2	PM10	PM2.5
Well Pad Preparation	2.07	22.61	11.20	0.02	22.67	4.35
Well Drilling	3.75	33.21	30.92	0.07	108.06	12.18
Well Testing	1.99	18.35	16.15	0.03	12.25	2.09
Well Clean-Up	0.87	9.35	6.78	0.01	19.90	3.57
Maximum Daily Construction Emissions	3.75	33.21	30.92	0.07	108.06	12.18
<b>ICAPCD Construction Thresholds</b>	75	100	550	150	150	550
<b>Exceed Thresholds?</b>	No	No	No	No	No	No

Source: County of Imperial, 2019 Appendix A.

As shown in **Table 11**, a summation of Project's emissions from all activities for one well site would not exceed ICAPCD's construction-related criteria pollutant thresholds. Because the well pad construction, drilling, testing and

cleanup activities would occur sequentially over an approximately 52 day period, the “maximum daily construction emissions” would occur during the well drilling phase of the Project. In the event redrilling is required, the emissions would not exceed those discussed in **Table 11**.

In addition, construction emissions would be short-term, limited only to the period when construction activity is taking place and all construction activities are required to comply with ICAPCD regulations for controlling fugitive dust emissions, including the standard regulations for all projects provided in the CEQA Handbook and summarized above in the Regulatory Section as well as Rule 800 – General Requirements for Control of PM<sub>10</sub>; Rule 802; Rule 802 – Bulk Materials; Rule 803 – Carry-Out and Track-Out; Rule 804 – Open Areas; and Rule 805 – Unpaved Roads. As such, construction-related emissions would be less than significant for the proposed Project.

**Operational Emissions**

The proposed exploratory geothermal wells would be tested after completion of the well drilling phase in order to determine the commercial potential of each well. If a well is judged to have commercial potential, well monitoring may be continued indefinitely until the Applicant proceeds with the approval process to place the well into commercial service. Therefore, the operational emissions would be limited to well monitoring activities that would consist of weekly or monthly vehicle trips to the well sites to obtain pressure and temperature measurements. The air emissions associated with the Project were initially based on a start year 2020, which has not been modified to 2024. Table 12 shows the estimated worst-case daily emissions from operation of the proposed Project.

As shown in **Table 12**, the exploratory wells operations-related emissions would not exceed ICAPCD thresholds. As such, operations-related emissions would be less than significant for the proposed Project. Due to the nominal operational emissions created from operation of the proposed Project, it is also anticipated that the cumulative operational emissions created from both the proposed Project and from the project for the four additional exploratory wells on federal land that is being processed under a separate environmental analysis would also result in a less than significant impact.

**TABLE 12: OPERATIONS-RELATED CRITERIA POLLUTANT EMISSIONS, WELL MONITORING**

Activity	Pollutant Emissions in pounds/day					
	ROG	NOX	CO	SO2	PM10	PM2.5
Area Sources <sup>(1)</sup>	0.08	0.02	0.00	0.00	0.00	0.00
Energy Usage <sup>(2)</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Sources <sup>(3)</sup>	0.01	0.07	0.10	0.00	5.96	0.60
Total Project Emissions	0.09	0.09	0.10	0.00	5.96	0.60
<b>ICAPCD Operational Thresholds</b>	137	137	550	150	150	550
<b>Exceed Thresholds?</b>	No	No	No	No	No	No

Notes:

1. Area sources consist of emissions from consumer products, architectural coatings, and landscape equipment.
2. Energy usage consists of emissions from natural gas usage (no natural gas appliances would be utilized as part of the Project).
3. Mobile sources consist of emissions from vehicles and road dust.

Source: County of Imperial, 2019, Appendix A.

**Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.**

**Would the project:**

- |   |                          |                                     |                          |                          |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**a and b) Less Than Significant With Mitigation Incorporated.** Conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections and comparing assumed emissions in the AQMP to proposed emissions. The exploratory wells associated with proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would not conflict with the applicable air quality plans, which include the 2017 Ozone SIP, 2018 PM<sub>10</sub> Plan, and 2018 PM<sub>2.5</sub> SIP that are described above in the air quality regulatory setting. Additionally, with approval of proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003, the Project would comply with local land use plans and population projections and would not exceed ICAPCD's thresholds during construction and operations. For these reasons, the Project would not conflict with or obstruct implementation of the applicable air quality plan. Therefore, impacts under this criteria are considered a less than significant impact.

Implementation of Mitigation Measure AQ-1 and AQ-2 would further minimize the impact.

Construction, drilling, testing and abandonment of the exploratory geothermal wells for which proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 is required and would not 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. Therefore, impacts under this criteria would be less than significant.

**Would the project:**

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**c) Less Than Significant.** Any diesel equipment used during construction of the proposed Project would consist of mobile equipment that would be changing locations, allowing the odors to disperse rapidly and not impact any nearby receptors. Should diesel equipment be required during maintenance at the proposed well sites, it would also change locations, allowing the odors to disperse rapidly and not impact any nearby receptors. Well construction activities would also result in the discharge of drilling mud that will be stored onsite in the containment basins. It is anticipated that due to the climate of the project site, any drilling mud would evaporate and harden quickly, which upon hardening will cease the release of odors. In addition, well testing activities have the potential to release geothermal gases that are a known source of odors. Since most well testing activities are anticipated to be limited to less than a day, the well testing odors would be temporary and the odor impacts would be likely not be noticeable at the nearest sensitive receptors that are located 0.2 mile or farther from the proposed well sites. Therefore, construction and operation of the exploratory geothermal wells for which proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would be

required would not create objectionable odors affecting a substantial number of people, and impacts would be less than significant.

**Would the project:**

- d) Expose sensitive receptors to substantial pollutant concentrations?

**d) Less Than Significant.** The nearest sensitive receptor to the exploratory wells is a single-family home located on Skyway Drive that is as near as 0.20 mile to the southeast of Well Site# 47-32. As discussed above in (a), the criteria pollutant emissions have been calculated for construction activities, which were found to be within the ICAPCD's allowable construction thresholds. Due to the limited amount of criteria pollutants created from construction and operational activities and the distances to the nearest sensitive receptors, construction and operational emissions would not expose sensitive receptors to substantial concentrations of criteria pollutants.

In addition, to the criteria pollutant emissions, construction activities have the potential to expose nearby sensitive receptors to toxic air contaminants (TACs), which would be created from the operation of diesel-powered equipment in the form of diesel particulate matter (DPM). According to SCAQMD methodology, health effects from TACs are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the proposed Project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment and by January 2023, no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed Project.

Operational emissions would be limited to weekly or monthly vehicle trips to obtain pressure and temperature measurements well monitoring activities. As discussed above in (a), the criteria pollutant emissions have been calculated for operational activities, which were found to be within the ICAPCD's allowable operational thresholds. Due to the limited amount of criteria pollutants created from operational activities and the distances to the nearest sensitive receptors to the proposed exploratory wells, operational emissions would not expose sensitive receptors to substantial concentrations of criteria pollutants that are anticipated to create nominal levels of emissions and would not result in a substantial increase in traffic volumes, which have the potential to create CO hotspots. As such, operation of the proposed Project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Therefore, implementation of the Project would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be less than significant. Implementation of Mitigation Measure AQ-1 and AQ-2 would further minimize the impact.

### **Mitigation**

MM-AQ-1: Prior to commencing construction, the Project proponent shall submit a Dust Control Plan to the ICAPCD for approval identifying all sources of PM10 and PM2.5 emissions and associated mitigation measures during the construction and operational phases of the Project. The Project proponent shall submit a Construction Notification Form to the ICAPCD ten days prior to the commencement of any earthmoving activity. This plan would provide a detailed list of control measures to reduce fugitive emissions from construction and operational activities, including but not limited to watering of unpaved roads, vehicle speed limits, windbreaks, transport container covers, and cleaning and sweeping procedures. The Dust Control Plan submitted to the ICAPCD shall meet all applicable requirements for control of fugitive dust emissions, including the following measures designed to achieve the no greater than 20-percent opacity performance standard for dust control:

- All disturbed areas, including bulk material storage, that is not being actively used shall be effectively stabilized; and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative groundcover. Bulk material is defined as earth, rock, silt, sediment, and other organic and/or inorganic material consisting of or containing PM with 5 percent or greater silt content.
- All on- and off-site unpaved roadway segments being used for 50 or more average vehicle trips per day shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by the use of restricting vehicle access, paving, chemical stabilizers, dust suppressants, and/or watering.
- All unpaved traffic areas one acre or more in size with 75 or more average vehicle trips per day shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- All track-out or carry-out, which includes bulk materials that adhere to the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto the pavement on paved public roads, shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road in an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water or chemical stabilizers, or by sheltering or enclosing the operation and transfer line except, where such material or activity is exempted from stabilization by the rules of ICAPCD.
- Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.



- Fugitive dust generation during construction would be minimized by watering as needed to meet Imperial County standards for fugitive dust control. To further reduce fugitive dust emissions, vehicle traffic on unpaved roads would be kept below 15 miles per hour.
- During grading, the Project would be watering actively disturbed on-site areas at least three times a day as necessary to reduce fugitive dust emissions.
- Access to the site would be via State Route 86 and Airpark Drive. All workers, vendors and haul trucks would be required to utilize these roadways.
- The Project would provide wheel shakers at the exit(s) of the construction site to minimize dust being tracked off the Project site and onto the roadways.
- Operational on-road trips shall not operate on unpaved dirt roads.

**MM-AQ-2:** Prior to commencing construction, the Project proponent shall submit and commit to a Combustion Exhaust Emissions Control Program. This plan would provide a detailed list of control measures to minimize exhaust emissions during Project construction, including but not limited to fuel use, engine maintenance, and procedures:

- The Exhaust Emission Control Plan shall provide a detailed list of control measures to minimize exhaust emissions during Project construction, including but not limited to fuel use, engine maintenance, and procedures.
- The construction contractor shall be required to utilize construction equipment using diesel engines less than 50 horsepower with certified NOx emissions rated as Tier 3 or better. All off-road diesel-powered equipment greater than 50 horsepower that is used on-site during construction of the Project shall meet USEPA Tier 4 offroad emission standards and Level 3 diesel particulate filters.
- When commercially available, fossil fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set).
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure, Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Where access to alternative sources of power are available, portable diesel engines shall be prohibited. Haul truck shall be 2010 model year trucks or newer (a gross vehicle weight rating of at least 14,001 pounds), or best commercially available equipment, that meet the California Air Resources Board 2010 engine emissions standards at 0.01 g/horsepower-hour of particulate matter and 0.20 g/horsepower-hour of NOx emissions or newer, cleaner trucks.

- The volatile organic compounds (VOC) architectural coating limits specify that the use paints and solvents with a VOC content of 100 grams per liter or less for interior and 150 grams per liter or less for exterior surfaces shall be required.

#### **IV. BIOLOGICAL RESOURCES.**

Power Engineers, Inc. prepared a Botanical Survey Report in 2017 for the Truckhaven Geothermal Project Proposed Well Sites (Power Engineers, 2017). The Botanical Survey Report, included as Appendix C of the 2019 MND, documented the results of pre-field research as well as focused special-status plant species surveys to determine the potential for special-status plant species to occur in the area. The surveys were conducted in late-spring and early summer of 2017 during the appropriate blooming periods for special-status plant species. The survey methodology followed the U.S. Fish and Wildlife Service's (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS, 2011), the recommended botanical survey guidelines of the California Department of Fish and Wildlife (CDFW, 2000), the protocols for surveying and evaluating impacts (CDFW, 2009), the BLM (BLM, 2005), and the California Native Plant Society (CNPS, 2001). Power Engineers, Inc. also prepared a Biological Resources Evaluation Report for the Truckhaven Geothermal Exploration Project's Geophysical Survey in 2018 (Powers Engineers, 2018), which included a literature and database search including the California Native Plant Society (CNPS) Rare Plant Inventory and the California Natural Diversity Database (CNDDB) records, a field survey of the biological study area (BSA) in April and May of 2016 and May and April of 2018.

Additionally, in 2022, Chambers Group, Inc prepared a *Jurisdictional Delineation Report for the Truckhaven Geothermal Exploration Project* to delineate jurisdictional wetlands and/or non-wetland Waters of the United States or State for two of the proposed exploratory wells (Well #18-32 and Well #47-32) and their associated access roads (Chambers Group, 2022). This *Jurisdictional Delineation Report* is included as Appendix C of this Initial Study.

Power Engineer's 2018 Biological Resources Evaluation Report identified that the access roads for Well #18-32 and Well #47-32 would be located within a 100-year FEMA floodplain and therefore could be considered to be jurisdictional waters of the United States or State (Power, 2018). The jurisdictional delineation, included as Appendix C of this Initial Study provided a full review of jurisdictional regulatory authority over wetlands and non-wetland waters of the U.S./state to define the physical boundaries of regulation by various federal and state agencies (Chambers Group, 2022; Appendix C). Field investigations were performed on April 26 and 27, 2022, to delineate potential jurisdiction waters and wetlands that could be affected. The analysis contained in this section is based on the findings of these technical reports.

#### **Survey Results**

Surveys to document special status flora and fauna species were conducted for Truckhaven Geothermal Exploration Project in 2016, 2017, and 2018 by Power Engineers (County of Imperial, 2019, Appendices B and C). Preliminary investigation included reviews of information obtained from literature searches, examinations of habitat as discernible from aerial photographs, database searches including the California Native Plant Society and the California Natural Diversity Database records, and previous surveys. No changes were noted between the California Department of Fish and Wildlife (CDFW) and CNPS 2016 and 2018 data. To identify the existing and potential biological resources present in the project vicinity, a geographic information system search was performed. This consisted of mapping baseline biological resource data (e.g., vegetation mapping, CNDDB records). Field surveys of the biological study area (BSA)

for the botanical survey were conducted in late-spring and early summer of 2017. Field surveys for the biological resources evaluation were conducted in April and May of 2016 as well as during May and April of 2018.

Power Engineers provided a wildlife biologist and a botanist for the surveys. The role of the wildlife biologist was to record observations of wildlife species, with emphasis on special-status species such as flat-tailed horned lizard (*Phrynosoma mcallii*) and burrowing owl (*Athene cunicularia*) and to record active or potential burrows for a variety of wildlife species. The botanist was tasked with creating a vegetation map of the surveyed area, extending as far as they could reliably determine using line-of-sight and aerial imagery, and identifying and recording plant species encountered, with emphasis on special- status plant species. Botanists also recorded occurrences of seeps encountered.

All detected wildlife and botanical species were recorded, as were observed vegetation communities within and adjacent to the survey corridors. Wildlife species were detected either by observation, by vocalization, or by sign (e.g., tracks, burrows, scat). The botanical inventory was floristic in nature, meaning that all plants observed were identified to the taxonomic level needed to determine whether they were special- status plant species. Vegetation communities within the project area, classified according to Holland (1986), consisted primarily of Sonoran creosote bush scrub, Desert Saltbush Scrub, Desert Wash and Bare Ground/Disturbed.

A list of plant species observed during the field surveys was included in Appendix C of the 2019 MND. One special-status wildlife species - flat-tailed horned lizard, was detected within the project area. Few wildlife species were observed within the proposed Project area, but wildlife sign was observed more frequently. Burrows of varying sizes were present intermittently throughout the proposed Project area, including rodent and potential burrowing owl burrows. A small number of unoccupied bird nests were also observed.

### **Special Status Plant Species**

A total of 38 special status plant species were found to have the potential to occur within the project area. Of the 38 special-status plant species considered to have a potential to occur, seven (7) were observed during the 2016 and 2018 surveys; and one special-status plant species (Salton milk vetch [*Astragalus crotalariae*], was observed during the botany specific survey performed in 2017 (County of Imperial, 2019; Appendix C). Three more were identified in the Project area according to surveys done in 2016 and 2018 (County of Imperial, 2019; Appendix B).

Six species were found to have a high potential for occurrence within the Project area as they were observed in the Project vicinity. Three species were determined to have a moderate potential for occurrence within the Project area, and seven (7) had a low potential, while the remaining were determined to be absent due to the lack of suitable habitat or because the project area was found to be below the known elevation range for the species. Potential for occurrence was based on habitat, elevation, soil, and proximity to known recorded occurrences of a species.

Appendix C of the Biological Resources Evaluation Report listed the special status plant species and their potential to occur within the project (POWER, 2018). The special status plant species listed below were observed or were determined to have at least a moderate potential to occur within the proposed area:

- chaparral sand-verbena (Present)
- Salton milk-vetch (Present)
- Harwood's milk-vetch (M)
- ribbed cryptantha (M)
- sand food (M)
- Olney's three-square rush (Present)

- Peirson's pincushion (M)
- Wiggins croton (M)
- Orcutt's woody aster (M)
- Thurber's pilostyles (Present)

Note: M = Moderate potential to occur

A plant was considered to be of special-status if it met one or more of the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the Federal Endangered Species Act (50 Code of Federal Regulations Part 17.12 [listed plants]);
- Listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CDFW, 2017);
- Identified by the CDFW as species of concern or fully protected species, including fish and wildlife that do not have State or federal threatened or endangered status, but may still be threatened with extinction (CDFW 2017);
- Included in the CNPS Rare Plant Inventory (CNPS 2017);
- Otherwise defined as rare, threatened, or endangered under the California Environmental Quality Act CEQA;
- Identified by California State Parks Ocotillo Wells Field Office as a sensitive species; or
- Identified by the Bureau of Land Management (BLM) El Centro Field Office as a sensitive species.

### **Special Status Wildlife Species**

A total of 10 special status wildlife species were initially determined by the literature review to potentially occur within the Project area. Two additional species were added, based on information provided by State Parks in 2017, bringing the number to 12. Of the 12 special status wildlife species, one species, flat-tailed horned lizard, was detected within the BSA, two species had a moderate potential to occur; five had a low potential to occur, and the remainder were determined to be absent. Their habitat description, status, and potential for occurrence within the BSA are detailed in the Biological Resources Evaluation Report (Powers, 2018a). Additionally, small mammal burrows occur throughout the proposed Project area that can provide suitable cover for a variety of wildlife species, including flat-tailed horned lizard and burrowing owls. It should be noted State Parks, in their comment on the 2019 MND, mentioned that other sensitive species have been detected in the proposed project area, although they were not detected during the biological surveys specific for this Project. Of particular interest is the multiple observations of nesting prairie falcon (*Falco mexicanus*) within the project area.

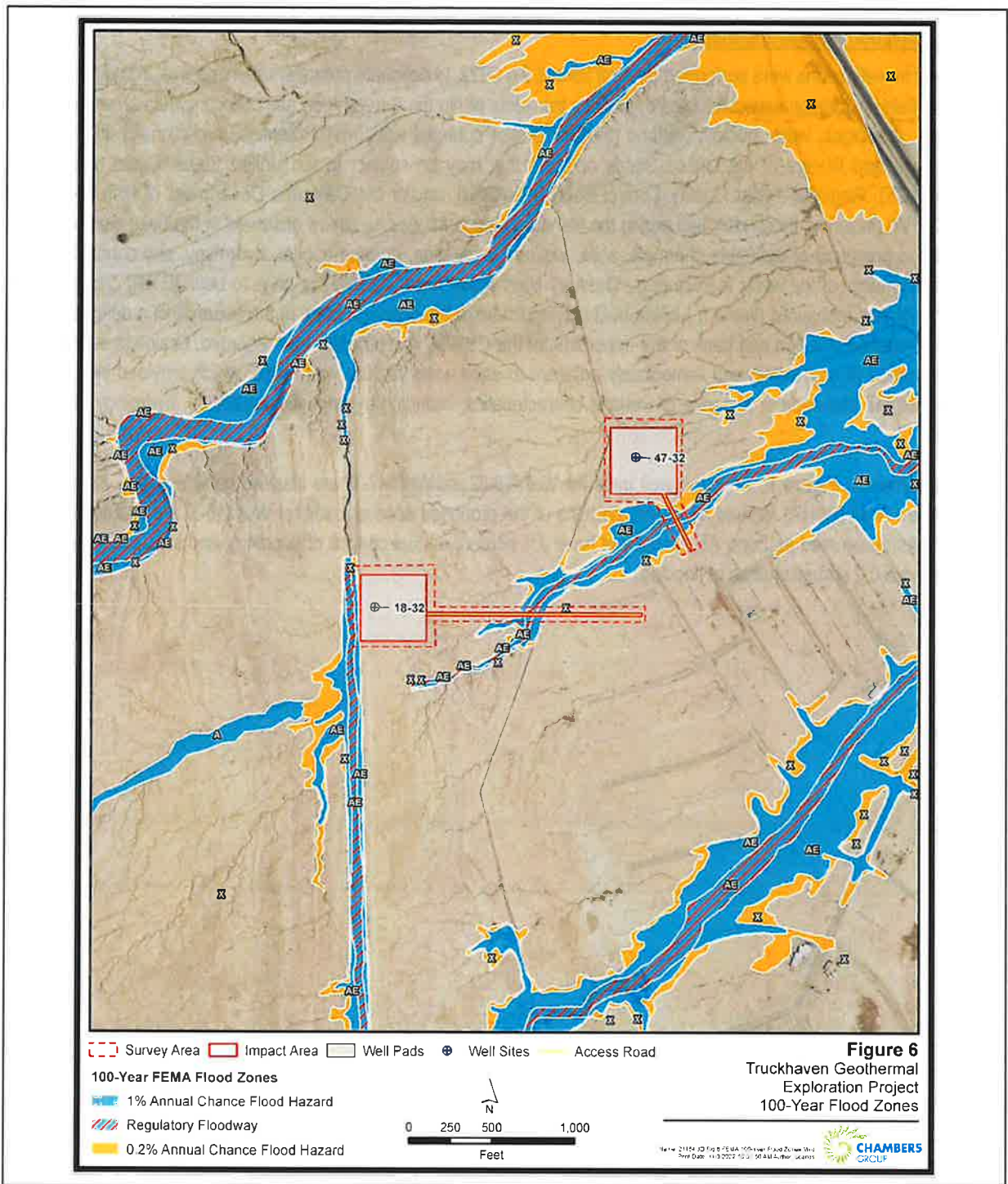
The following special status wildlife species have at least a moderate potential to occur within the Project area, or were observed during fieldwork:

- Burrowing Owl
- Flat-tailed Horned Lizard
- Prairie Falcon
- Le Conte's Thrasher
- Palm Springs Pocket Mouse

### **Jurisdictional Waters/Wetlands**

Field investigations were performed on April 26 and 27, 2022, to delineate potential waters on-site, including wetlands. The field delineation was conducted by walking transects within the Survey Area and collecting data on water features (e.g., drainages, water bodies, wetland habitats, and/or potential wetlands). Potential jurisdictional wetlands and/or non-wetland Waters of the United States or State that may be subject to the United States Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW), including those identified during the literature search as well as others observed in the field, were evaluated for the presence of definable channels, soils, wetland vegetation, riparian habitat, hydrology, and connectivity. The existing width of the water feature (e.g., Ordinary High Water Mark [OHWM] or bank to bank [BTB]) crossed by the Project was measured (linear ft.) in the field perpendicular to the drainage path. In the absence of a defined wetland, the presence of a bed and bank or the upper limit of the OHWM, if applicable, was recorded. Drainage substrate and vegetation (if any) within and immediately adjacent to each water feature was noted, which provided information to assess the presence or absence of wetland characteristics, including hydrophytic vegetation, hydrology, and hydric soils.

As shown on **Figure 6**, while the well pads for Well #18-32 and Well #47-32 are situated outside of any Special Flood Hazard Area (SFHA) defined by FEMA; portions of the proposed access roads for Well #18-32 and Well #47-32 contain SFHAs designated as Zone AE (areas that have a 1 percent annual chance of flooding), and shaded Zone X (areas having a 0.2 annual chance of flooding).



Source: Chambers Group, 2022.



100 Year Flood Zones  
Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
Figure 6

EEC ORIGINAL PKG

The boundaries of each water feature were collected and digitized utilizing GIS technology and software to create a shapefile that can be reviewed by respective Agencies' jurisdiction, based on current Agency guidance documents. Water features in the vicinity of the project are depicted on **Figure 7**. For the purpose of determining hydrologic connectivity to a TNW, aerial photos, NWI maps, and USGS quadrangle maps were reviewed; and all features were inspected in the field on- and offsite for true connectivity.

No hydric soils were found within the Survey Area, and there are no documented historic wetlands within the Survey Area (Chambers, 2022). Additionally, no wetland features (e.g., wetland plants, hydric soils) were identified within the Survey Area. However, several drainages were documented in the vicinity of the Survey Area, including one stream/river that has been documented within the Impact Area of the proposed access roads for both well pads, one canal/ditch drainage feature that has been documented just west of the proposed Well Pad #18-32 Impact Area, and one stream/river that connects into these two features. The field delineation confirmed the presence of these three drainages (Drainages 1, 2, and 4, respectively), and one additional man-made ephemeral ditch (Drainage 3). A total of 1,347 linear ft. of drainages were mapped within the Survey Area, including 424 linear ft. within the Impact Area.

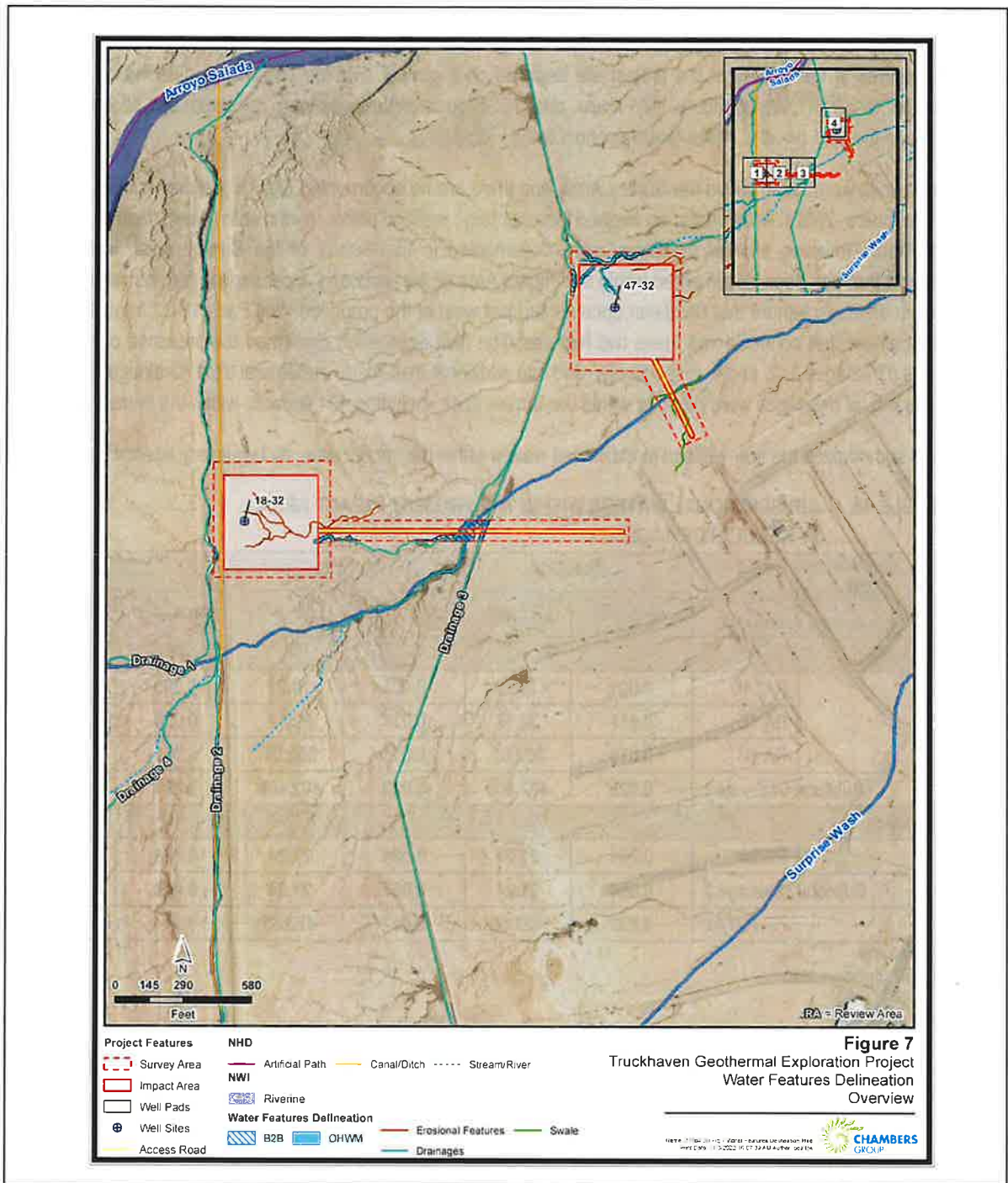
**Table 13** summarizes the non-wetland jurisdictional waters within the impact area, by regulatory agency.

**TABLE 13. JURISDICTIONAL WATERS WITHIN THE PROJECT IMPACT AREA,  
BY REGULATORY AGENCY**

Non-Wetland Water Resource Feature (Within Impact Area Only)		USACE		RWQCB		CDFW	
		Area (ac)	Linear ft.	Area (ac)	Linear ft.	Area (ac)	Linear ft.
<b>Drainage 1</b>							
	RA* 1D	0.001	18.22	0.001	18.22	0.006	18.22
	RA 1E	0.011	32.17	0.011	32.17	0.030	32.17
	RA 1F	0.016	352.01	0.016	352.01	0.061	352.01
<b>Subtotal Drainage 1</b>		<b>0.028</b>	<b>402.409</b>	<b>0.028</b>	<b>402.409</b>	<b>0.096</b>	<b>402.409</b>
<b>Drainage 3</b>							
	RA 3A	0.004	21.24	0.004	21.24	0.008	21.24
<b>Subtotal Drainage 3</b>		<b>0.004</b>	<b>21.24</b>	<b>0.004</b>	<b>21.24</b>	<b>0.008</b>	<b>21.24</b>
<b>TOTAL</b>		<b>0.032</b>	<b>423.65</b>	<b>0.032</b>	<b>423.65</b>	<b>0.104</b>	<b>423.65</b>

\*Review Area

Source: Chambers, 2022.



Source: Chambers 20222



Water Features  
Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
Figure 7



**Impact Analysis**

**Would the project:**

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

**a) Less Than Significant With Mitigation Incorporated.** Due to the potential for the exploratory geothermal wells and associated facilities, for which the proposed Zone Change and General Plan Amendment are required, to impact special- status plant and animal species, impacts would be potentially significant. Implementation of Applicant Proposed Measures **APM BIO-1, APM BIO-2, and APM BIO 4** through **APM BIO-9**, as well as the mitigation measures **MM BIO-1 through MM BIO-10** would ensure that impacts to special-status plant and animal species would be reduced to a level below significant.

**Would the project:**

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

**b) No Impact.** The Biological Resources Evaluation Report (Powers, 2018a; 2019 MND Appendix B) did not identify any riparian habitat throughout the survey area. The survey area is within the boundary of the BLM Desert Renewable Energy Conservation Plan (DRECP), which identifies sensitive natural communities; though, the proposed Project area is not classified in the DRECP as an Area of Critical Environmental Concern, California Desert National Conservation Lands, or Wildlife Allocation (BLM 2016).

The Botanical Survey Report (prepared for the Truckhaven Geothermal Exploration Project(Powers, 2017; 2019 MND Appendix C) did not identify any riparian habitat throughout the well sites associated with the proposed Project. Further, the jurisdictional delineation (Chamber Group, 2022, Appendix C) did not identify any wetland plants. Because this region only receives approximately 3 inches of rain a year, the washes identified within the Survey Area for jurisdictional features are most often dry and do not support distinct riparian/wetland vegetation. Therefore, construction and operation of the exploratory wells for which a zone change and general plan amendment are required would have not substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

**Would the project:**

- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

**c) Less Than Significant With Mitigation Incorporated.** Table 13 indicates the acreages of jurisdictional resources within the impact area, the locations of which are shown on Figure 7 of the Jurisdictional Delineation (Chambers, 2022; pages 1 through 4). Jurisdictional resources would be regulated by the USACE under Section 404 of the Clean Water Act (CWA); by the RWQCB under Section 401 of the CWA, and CDFW under Section 1602 of the California Fish and Game Code.

As noted within the Jurisdictional Delineation, implementation of the Well #18-32 and Well #47-32 and their access roads could affect federal- and state- jurisdictional non-wetland waters of the U.S./State. Any potential temporary disturbance to or permanent loss of wetlands and other jurisdictional water bodies or loss of function of these features through direct fill or increased erosion and water quality degradation could be considered a significant impact. Such impacts would be mitigated with implementation of mitigation measure **MM BIO-10**, which requires impact avoidance to the extent feasible. If avoidance is not feasible, mitigation, determined in consultation with USACE, CDFW, RWQCB, as part of the wetland permitting process shall be provided. Mitigation ratios shall be developed through consultation with the wetland permitting agencies.

Mitigation measure **MM HYDRO-3** described in Section IX. Hydrology/Water Quality would also be implemented to reduce potential impacts on wetlands and other jurisdictional waters.

**Would the project:**

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

**d) Less Than Significant.** The well sites associated with the proposed Project area are currently vacant. The well sites do not provide for any substantial movement of wildlife species through a land-based corridor. However, as identified in the Biological Resources Evaluation Report (2018) prepared by Power Engineers, there is potential for nesting birds to occur within the well sites; a potential exists for avian species covered by the Migratory Bird Treaty Act (MBTA) to nest onsite. During the surveys for the Biological Resources Evaluation Report no active or old avian nests were observed. If construction activities are to occur during bird breeding season, nesting bird surveys will be required in accordance with the MBTA, as described in Mitigation Measure **MM BIO-3**. Implementation of **MM-BIO-3** would reduce impacts to nesting birds to below of level of significance.

**Would the project:**

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

**e) Less Than Significant.** The County of Imperial General Plan's Conservation and Open Space Element's Open space and Creation Conservation Policy requires detailed investigations to be conducted to determine the significance, location, extent, and condition of natural resources in the County (County of Imperial 2016). If any rare, sensitive, or unique plant or wildlife habitat would be impacted by a project, the County must notify the agency responsible for protecting plant and wildlife before approving the project.

Construction of the exploratory geothermal wells for which proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would be required is not anticipated to conflict with any local policies or ordinances protecting biological resources during construction or operation of the geothermal exploratory wells. Consistent with the County's Open Space Conservation Policy, appropriate studies have been prepared for the well sites and responsibility and Trustee agencies for protecting potential impacted plant and wildlife (i.e., the US Fish and Wildlife Service and the California Department of Fish and Wildlife) received notification of the Truckhaven Geothermal Exploration Project during preparation of the 2019 MND. No comments were received from either agency.

Additionally, implementation of Applicant Proposed Measures **APM BIO-1**, **APM BIO-2**, and **APM BIO 4** through **APM BIO-9**, as well as the mitigation measures **MM BIO-1 through MM BIO-10** would reduce any potential impacts to rare, sensitive, or unique plant or wildlife habitat to less than significant; therefore, this impact would be less than significant.

**Would the project:**

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

**f) Less Than Significant.** The Project area is located west and outside boundaries of the Ocotillo Wells SVRA Research Area designated within the Flat-tailed Horned Lizard Rangewide Management Strategy. This document was written by the members of the Flat-tailed Horned Lizard Interagency Coordinating Committee in 1997, and updated in 2003, with the purpose of guiding conservation and management of sufficient habitat to maintain extant populations of flat-tailed horned lizards in five management areas near the California-Arizona border (ICC 2003).

The Applicant shall coordinate with the BLM and California Department of Parks and Recreation (CDPR) to ensure the construction of the exploratory geothermal wells for which proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would be required complies with the goals and the mitigation strategies of the Flat-Tailed Horned Lizard Rangewide Management Strategy. This coordination and compliance would ensure that the proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Impacts would be less than significant.

## Mitigation

In addition to Applicant Proposed Measures **APM-BIO-1 through APM-BIO-9**, presented on **Table 7**, the following mitigation measures shall be implemented to reduce impacts to below a level of significance.

### BIOLOGICAL RESOURCES MITIGATION MEASURES

**MM BIO-1: Mitigation of Impacts to flat-tailed horned lizards and their habitat.** Prior to construction of the Well #32-5, Well #47-5, Well #18-32, Well #47-32 and their associated access roads, preconstruction surveys shall be conducted no less than 14 days prior to the start of all Project-related activities. Preconstruction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the in accordance with the Flat-tailed Horned Lizard Rangewide Management Strategy (Flat-tailed Horned Lizard Interagency Coordinating Committee, 2003). If the preconstruction surveys confirm presence of flat-tailed horned lizard, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW to determine appropriate avoidance, minimization, and mitigation measures.

Prior to construction of the first exploratory well under the Truckhaven Geothermal Exploration Project, a Capture/Relocation Plan for flat-tailed horned lizard shall be prepared by a qualified biologist. The plan shall include preconstruction survey and monitoring methods, capture and relocation methods, and suitable relocation areas. The Capture/Relocation Plan may include additional protection measures during construction including:

- Creating areas of land or small paths/culverts between project facilities for wildlife movement,
- Installing silt fencing around work areas to prevent migration of adjacent wildlife into impact areas,
- Installing pitfall traps in spring/summer/fall to trap any individuals that remain on the site for removal from work areas), and/or
- Biological monitoring during construction to inspect fencing and pitfall traps. Only a qualified biologist with an appropriate permit from CDFW may handle flat-tailed horned lizard.

The Capture/Relocation Plan shall be submitted to and approved by CDFW and the County of Imperial Planning and Development Services Department. The results of the Preconstruction Survey and Monitoring Plan shall also be submitted to CDFW and the County of Imperial.

**MM BIO-2: Special Status Species Avoidance. Impacts** to special-status plant species shall first be avoided where feasible, and where not feasible, impacts shall be compensated through approved methods, including reseeding.

**MM-BIO-3 Nesting Bird Survey (Replaces APM-BIO-3 Nesting Bird Survey).** Nesting bird surveys shall be performed by a qualified avian biologist no more than three (3) days prior to vegetation removal or ground-disturbing activities throughout the construction of all phases of the Project. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on site until a qualified

biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance. Copies of the report documenting the results of the Nesting Bird Survey and monitoring (if required) shall be provided to the CDFW and Imperial County Planning and Development Services.

**MM BIO-4: Minimize Disturbance.** The footprint of disturbance will be minimized to the maximum extent feasible. Entrapment avoidance measures within the proposed containment basins, such as ramps, fencing, etc., shall be installed to avoid potential entrapment of wildlife species.

**MM BIO-5: Vehicle Maintenance.** Vehicles and equipment should be maintained and free of leaks. All hazardous material, oil, hydraulic, or other fluid leaks should be contained and cleaned immediately to reduce the risk of negatively impacting water or soil quality.

**MM BIO-6: Revegetation.** If required, the area of project-related disturbance will be revegetated (reseeded) in consultation with requirements set forth by the County. Mitigation ratios for disturbing habitat are assumed to be 1:1 for temporary disturbance and 2:1 for permanent disturbance.

**MM BIO-7: Post-Construction Clean-Up Plan.** Prior to construction, a plan should be created that will address post-construction clean-up, soil stabilization and erosion control, and any required revegetation for land disturbed by construction related activities, in coordination with appropriate landowners and regulating agencies. The plan should include a monitoring schedule, responsible parties, minimum standards, and contingency plans.

**MM BIO-8 Clean Project Equipment.** Project-related equipment will be washed prior to entering the project area for the first time to reduce the chance of transporting noxious weed seeds from outside the area.

**MM BIO-9: Weed Free Straw/Hay Bales.** Straw or hay bales that are used during construction will be certified weed-free.

**MM BIO-10 Jurisdictional Waters of the US/State:** Impacts to jurisdictional waters of the US and waters of the State shall be avoided to the extent feasible. If avoidance is not feasible, restoration/compensation shall be provided for affected jurisdictional areas. The Project will provide restoration/compensation for all unavoidable impacts on areas under the jurisdiction of USACE, RWQCB, and CDFW through the wetland permitting processes. Impacts on jurisdictional areas shall be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible, the Project applicant shall provide the necessary mitigation required as part of wetland permitting, by creation, restoration, or preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional areas.

Prior to impacts the Applicant or its contractor shall obtain, and shall comply with all mitigation and conditions associated with, one or more of the following permits, as applicable: a CDFW Lake and Streambed Alteration Agreement; RWQCB Section 401 Water Quality Certification; and Section 404 USACE permit. Permit compliance shall be met through the purchase of in-lieu credits for non-vegetated streams at an approved mitigation bank, implementation of in-kind or out-of-kind restoration, or a combination of these actions. The Mitigation ratio will be 1:1 or as developed through consultation with and approval by the wetland permitting agencies.

## V. CULTURAL RESOURCES

In 2018, Power Engineers prepared a Class III Cultural Resources Survey for the Truckhaven Geothermal Project: Well Pads and Access Routes, which was included as Appendix E of the 2019 Truckhaven Geothermal Exploration Project MND (Powers, 2018b). The Class III survey included a records search of the South Coast Information Center and a pedestrian surveys conducted in 2106 and 2017, for an Area of Potential Effects (APE) covering 174.77 acres on BLM, SVRA, State Land Commission Land and private lands.

The record search indicated that 21 cultural resource studies have been conducted within one mile of the APE; between 1973 and 2012. The records search indicated that two cultural resources were previously recorded within the APE. A total of 12 archaeological sites and 12 isolate artifacts were identified within the APE. **Table 14** summarizes the archaeological sites encountered during the Class III survey, their eligibility for listing on the National Register of Historic Places (NRHP), and the California Register of Historic Resources (CRHR) and avoidance recommendations. **Table 14** also notes that all sites were recommended to be avoided during potential well pad and road construction by at least 10 to 150 meters. Based these recommendations, the Applicant relocated the well pads and access road well pads to avoid these resources.

**TABLE 14 NRHP/CRHR ELIGIBILITY AND AVOIDANCE RECOMMENDATIONS FOR CULTURAL RESOURCES WITHIN THE APE**

Resource No. Jurisdiction	Age	Type	Description	Eligibility and Avoidance Recommendation
CA-IMP-6249 BLM/SVRA	Prehistoric	Artifact scatter	16 flakes, four tools, eight potsherds, no features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12788 (Temp.CN-10) BLM/SVRA	Prehistoric	Artifact scatter	25+ flakes, eight tools, a pumice concentration and lithic concentration as features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12789 (Temp.CN-20) BLM/SVRA	Prehistoric	Fish trap site	Four flakes, three tools, three cobble fish trap foundations	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 150 meters.</li> </ul>
CA-IMP-12790 (Temp. DIM-1) SLC/private	Prehistoric	Lithic scatter	150+flakes and 22+ tools. No features	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 80 meters.</li> </ul>
CA-IMP-12791 Temp DM-2 SLC/private	Prehistoric	Lithic scatter	36 flakes and at least seven tools. No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12792 Temp DM-5 SLC	Prehistoric	Lithic scatter	Nine flakes, one core and one tool. No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12793 (Temp. RK-1) SLC	Multi-component*	Artifact scatter	Three flakes, three tools and two church- key	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road</li> </ul>

**TABLE 14 NRHP/CRHR ELIGIBILITY AND AVOIDANCE RECOMMENDATIONS FOR CULTURAL RESOURCES WITHIN THE APE**

Resource No. Jurisdiction	Age	Type	Description	Eligibility and Avoidance Recommendation
			opened cans. No features.	construction by at least 10 meters.
CA-IMP-12794 (Temp. RK-2) SLC	Multi-component *	Artifact scatter	Two flakes and two cans: one church key and one hole-in-top. No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12795 (Temp. RK-3) Private	Prehistoric	Lithic scatter	14 flakes and six tools_ No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12796 (Temp. RK-4) BLM/SVRA	Prehistoric	Lithic scatter	One flake and two tools. No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
CA-IMP-12797 (Temp. RK-5) Private	Prehistoric	Lithic scatter	Three flakes and two tested cobbles. No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 80 meters.</li> </ul>
CA-IMP-12798 (Temp. RK-6) BLM/SVRA	Prehistoric	Lithic scatter	Ten flakes. No features.	<ul style="list-style-type: none"> <li>▪ Recommended Eligible to the NRHP and CRHR.</li> <li>▪ Avoid during potential well pad and road construction by at least 10 meters.</li> </ul>
<b>Isolated Artifacts</b>				
P-13-17178 (Temp. DM-ISO-2) Private	Prehistoric	Isolated artifact	Brown quartzite flake	Not Eligible
P-13-17179 (Temp. DM-ISO-4) Private	Prehistoric	Isolated artifact	Grey quartzite flake	Not Eligible
P-13-17186 (Temp. RK-ISO-1) SLC	Historic-era	Isolated trash	Steel can	Not Eligible

Notes: CRHR = California Register of Historic Resources NRHP = National Register of Historic Places

\* Contains pre-historic and historic era resources.

Source: Powers, 2018b.

In 2019, Power Engineers prepared a Class III Cultural Resources Survey for the Truckhaven Geothermal Project: 3D Seismic Project, which was included as Appendix D of the 2019 Truckhaven Geothermal Exploration Project MND (Powers, 2019). Because the 3-D Seismic Survey for the Truckhaven Geothermal Exploration Project was completed in 2021, this section is based on the findings of the 2018 Class III Survey for well pads and access roads.

**Would the project:**

- a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

**a) Less Than Significant With Mitigation Incorporated.** For purposes of §15064.5 of the California Code of Regulation, the term "historical resource" includes a resource listed in, or determined to be eligible for listing in the California Register of Historical Resources; a resource included in a local register of historical resources or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code; or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, §5024.1, Title 14 CCR, Section 14 CCR, Section 4852).

To be considered historically significant, a resource must meet one of four criteria for listing outlined in the CRHR (CEQA Guidelines 15064.3 (a)(3)) and/or in the NRHP (36 CFR Part 60.4) . In addition to meeting one of the criteria outlined the CRHR, a resource must retain enough intact and undisturbed deposits to make a meaningful data contribution to regional research issues (CCR Title 14, Chapter 1.5 Section 4852 (c)). Further, based on CEQA Guidelines Section 15064.5 (b), substantial adverse change would include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource is materially impaired. This can occur when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR, NRHP, a local register, or historic resources.
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its identification in an historical resources survey meeting the requirements of PRC §5024.1(g), unless the public agency establishes by a preponderance of the evidence that the resource is not historically or culturally significant.

The 2018 Class III Cultural Resource Survey for Truckhaven Geothermal Wells Pad and Access Roads (Powers 2018b) identified 12 archaeological sites within the APE, two of which contained historic-era resources. Direct effects on historical resources in the APE could result from ground disturbing activities associated with the construction of geothermal exploratory well facilities, such as clearing vegetation, grading roads, blading well pads, delineating staging areas, and drilling wells. While the Applicant modified the project to relocate proposed well sites and access roads to avoid significant historical resources, construction-related ground disturbing activities have the potential to cause substantial adverse changes to resources that escaped detection during the survey and/or buried prehistoric and historic resources. If such resources are encountered during construction and those resources meet the eligibility criteria of the CRHR and/or the NRHP, the impact would cause a substantial adverse change in the significance of a historical or archaeological resource. This would be a potentially significant impact to historical resources. With implementation of Applicant Proposed Measures **APM CUL-1** and **APM CUP-2**, along with mitigation measures **MM CUL-1** and **MM CUL-2**, impacts to significant historical resources would be less than significant.



**Would the project:**

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines § 15064.5?

**b). Less Than Significant With Mitigation Incorporated.** The 2018 Class III Cultural Resource Survey for Truckhaven Geothermal Wells Pad and Access Roads (Powers 2018b) identified 12 archaeological sites within the APE. Because prehistoric archaeological resources are extremely important to Native American tribes all prehistoric sites were considered eligible for the CRHR and the NRHP.

Direct effects on pre-historical (archaeological) resources in the APE could result from ground disturbing activities associated with the construction of geothermal exploratory well facilities, such as clearing vegetation, grading roads, blading well pads, delineating staging areas, and drilling wells. While the Applicant modified the project to relocate proposed well sites and access roads to avoid significant archaeological resources, construction-related ground disturbing activities have the potential to cause substantial adverse changes to resources that escaped detection during the survey and/or buried prehistoric and historic resources. If such resources are encountered during construction and those resources meet the eligibility criteria of the CRHR and/or the NRHP, the impact would cause a substantial adverse change in the significance of a historical or archaeological resource. This would be a potentially significant impact to historical resources. With implementation of Applicant Proposed Measures **APM CUL-1** and **APM CUP-2**, along with mitigation measures **MM CUL-1** and **MM CUL-2**, impacts to significant historical resources would be less than significant.

**Would the project:**

- c) Disturb any human remains, including those interred outside of formal cemeteries?

**c). Less Than Significant With Mitigation Incorporated.** While no potential human remains have been identified in the project area, subsurface activities always have some potential to impact previously unknown remains. This potential impact is considered a significant impact. **MM CUL-3** will ensure that the potential impacts to previously unknown human remains do not rise to the level of significance pursuant to CEQA. Implementation of **MM CUL-3** will reduce the potential impact associated with inadvertent discovery of human remains to a level less than significant.

**Mitigation**

In addition to Applicant Proposed Measures **APM-CUP-1** and **APM-CUL-2**, presented on **Table 7**, the following mitigation measures shall be implemented to reduce impacts to below a level of significance.

**MM-CUL-1: Prepare Cultural Resource Mitigation and Monitoring Plan.** Prior to construction, the Applicant shall prepare a mitigation and monitoring plan specific to Cultural Resources for submittal to the County of Imperial Planning and Development Services. The mitigation and monitoring plan shall identify procedures for monitoring and the implementation of a discovery plan in coordination with affected Tribal groups. The mitigation and monitoring plan will incorporate a worker awareness program, stop work authority and all avoidance recommendations from the 2018 Class III report.

**MM-CUL-2: Cultural Resources Construction Monitor.** The Applicant shall retain qualified archaeological monitors and a TCA (traditionally and culturally affiliated) Native American Monitor (if requested) for all ground-disturbing activities associated with the development of access roads and construction of the drill pads to ensure that the avoidance measures identified in the 2018 Class III Survey are implemented. If a significant cultural resource site is found during ground-disturbing activities associated with well pad or access road construction the Project features will either be moved, or the resource will be protected in place, or data recovery will be initiated, consistent with the mitigation and monitoring plan required by **MM-CUL-1**. The final disposition of archaeological or historical resources recovered on state land under the jurisdiction of the California State Lands Commission must be approved by the Commission.

**MM-CUL-3: Unanticipated Discovery – Human Remains.** California State law (California Health and Safety Code 7050.5) and federal law and regulations (Archaeological Resources Protection Act [ARPA], 16 United States Code [U.S.C.] 470 and 43 Code of Federal Regulations, [CFR] 7, Native American Graves Protection and Repatriation Act [NAGPRA] 25 U.S.C. 3001 and 43 CFR 10, and Public Lands, Interior 43 CFR 8365.1-7) require a defined protocol if human remains are discovered in the state of California regardless if the remains are modern or archaeological.

In the event that evidence of human remains is discovered, construction activities within 200 feet of the discovery shall be halted or diverted and the Imperial County Coroner will be notified (Section 7050.5 of the Health and Safety Code). If the Coroner determines that the remains are Native American, the Coroner will notify the NAHC, which will designate a most likely descendant (MLD) for the project (Section 5097.98 of the PRC). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

If the remains are located on federal lands, the federal land manager(s), federal law enforcement, and/or federal archaeologist should also be notified. If the human remains are determined by the Coroner to be prehistoric, the appropriate federal archaeologist must be called. The archaeologist will initiate the proper procedures under the Archaeological Resources Protection Act (ARPA), and/or the Native American Graves Protection and Repatriation Act (NAGPRA). If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 Inadvertent Discoveries must be followed.

## VI. ENERGY.

### Would the project:

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

a) **Less Than Significant.** Construction of the exploratory wells for which the proposed Zone Change and General Plan Amendment are required would result in the need for energy resources. The amount of energy resources required for the construction of the exploratory wells would be contingent on the well location because the total acreage of

disturbance would vary; therefore, the energy requirements for each site is unknown at this time. However, energy use for the exploratory wells would be temporary in nature and minimal. Operation of the well sites would not result in wasteful, inefficient, or unnecessary consumption of energy resources because the exploratory wells associated with the proposed Project would not involve the construction of structures (residential, commercial, or industrial) that would require daily usage of energy resources. This impact is less than significant and no mitigation would be required.

- b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

**b) Less Than Significant.** Construction of the exploratory wells for which proposed Zone Change and General Plan Amendment are required would not conflict or obstruct a renewable energy or energy efficiency plan because implementation of the well sites would occur within the Truckhaven Geothermal Leasing area, consistent with the Element. Therefore, impacts would be less than significant with regard to energy usage and renewable energy plans and no mitigation would be required.

## VII. GEOLOGY AND SOILS.

### Would the project:

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

- 1) 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?

**a.1) No Impact.** In accordance with the Alquist-Priolo Special Studies Zone Act (Chapter 7.5, Division 2, Public Resources Code, State of California, effective May 4, 1975) the Office of State Geologist delineated Special Study Zones which encompass potentially and recently active traces of four major faults (San Andreas, Calaveras, Hayward and San Jacinto). The Alquist-Priolo Special Study Zone Act is enforced by the County to assure that homes, offices, hospitals, public buildings, and other structures for human occupancy which are built on or near active faults, or if built within special study areas, are designed and constructed in compliance with the County of Imperial Codified Ordinance.

Construction of the exploratory wells for which the proposed Zone Change and General Plan Amendment are required would not result in the construction of any structure intended for human occupancy. Additionally, the proposed Project area is over 7 miles northwest of the nearest earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map (CGS 2023a). It is also not located adjacent any known seismic hazards as shown on Figure 7 of the County's Conservation and Open Space Element (County of Imperial 2015). There would be no impacts relating to the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map.

**Would the project:**

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:

2) Strong seismic ground shaking?

**a.2) Less Than Significant With Mitigation Incorporated.** California rests on the boundary between the North American Plate and the Pacific Plate. The San Andreas Fault system is located where the northwesterly drifting Pacific Plate grinds along and is subducted by the southwesterly drifting North American Plate. Baja, and California west of the fault system, are part of the Pacific Plate and move northwest compared to the rest of California and North America.

Southern California is a seismically active region, therefore it is highly likely that regional earthquakes would occur that could affect the exploratory well sites (County of Imperial, 1997); though, as noted in section a.1), no active faults are underlying or adjacent to the well sites. The proposed Project area is not located adjacent any known seismic hazards as shown on Figure 7 of the County's Conservation and Open Space Element (County of Imperial 2015). However, a quaternary fault runs through the Salton Sea Airport from north to south near proximate to four of the proposed well pads. All structures and onsite facilities would be designated in accordance with the California Building Code (CBC) for the peak site ground acceleration. Since the design and construction of the wells associated with the proposed Project would be required to conform to the specific mandated structural design requirements to protect against strong seismic shaking, the potential impacts due to strong seismic ground shaking are a less than significant impact. However, mitigation measure **MM GEO-1** will be required prior to issuance of a grading permit to help mitigate in the unlikely event of any of the above occurrences.

**Would the project:**

3) Seismic-related ground failure, including liquefaction?

**a.3) Less Than Significant.** The geology that makes up Imperial County includes young, unconsolidated sediments of the Salton Trough that are subject to failure during earthquakes, especially throughout the irrigated portions of Imperial Valley where the soil is generally saturated. Liquefaction, and related loss of foundation support, is a common hazard in these areas (County of Imperial, 1997).

A seiche is a to and from vibration of a body of water like the sloping of water in a jolted basin. Once initiated, the water body continues to oscillate independently. Seiches can be triggered by seismic events such as earthquakes. The most likely location for a significant seiche to occur is the Salton Sea. While there have been a number of seismic events since the formation of the Salton Sea, no significant seiches have occurred to date (County of Imperial, 1997).

The exploratory wells for which the proposed Zone Change and General Plan Amendment are required would not be located within an irrigated portion of Imperial Valley, causing the risk of liquefaction in the area to be low. Additionally, despite the survey area being close proximity to the Salton Sea, seiches in the area are unlikely. No liquefaction was recorded in the vicinity of the proposed Project area as a result of the April 4, 2010, El Major–Cucapah Earthquake (USGS, 2023). Additionally, the proposed well sites are approximately 80 miles from the nearest ocean, the Pacific Ocean, and therefore are too far to be at risk of experiencing a tsunami. Impacts associated with seismic-related ground failure, including liquefaction and seiche/tsunami are less than significant.

**Would the project:**

- 4) Landslides?

**a.4) No Impact.** A landslide refers to slowly to very rapidly descending rock or debris caused by the pull of gravity. Landslides affect humans in many ways. A very rapid landslide could result in casualties and devastating property damage while a slow landslide could result in the nuisance of having a fence slowly pulled apart. The cost in lives and property from landslides is surprisingly high. According to the U.S. Geological Survey, more people in the United States died from landslides during the last three months of 1985 than were killed by all other geologic hazards, such as earthquakes and volcanic eruptions. The damage to property from landslides each year exceeds the cost of earthquake damage for the last twenty years (County of Imperial, 1997).

The exploratory well sites are located in a relatively flat portion of Imperial County and are not identified as an area at risk of landslide (County of Imperial, 1997), therefore, there would be no impact.

**Would the project:**

- b) Result in substantial soil erosion or the loss of topsoil?

**b) Less Than Significant With Mitigation Incorporated.** Erosion is the removal of rock fragments or soil by the action of running water, glacial ice, or wind. Human activities can accelerate erosion. The areas in Imperial County that are most subject to erosion are the Algodones Sand Dunes paralleling the East Mesa and Superstition Mountain, and the Chocolate, Picacho, Cargo Muchacho, and Coast Range Mountains. The remainder of Imperial County is generally flat and experiences low levels of natural erosion (County of Imperial, 1997).

Although the exploratory wells of the exploratory wells for which the proposed Zone Change and General Plan Amendment are required are located in a relatively flat area identified as having low erosion potential in the County's Seismic and Public Safety Element, the disturbance of soil crust during the construction of exploratory wells will increase the erosion potential, as well as expose potentially more emissive subsoils. In addition, during the 2018 vibriosis demonstration debris was noted falling from wash walls. Two well locations would have access roads constructed across FEMA Special Flood Hazard Areas and erosion could occur within these areas or other wash areas from construction of the exploratory wells. This impact would be significant. However, as part of the proposed Project, applicant project design feature **APM GEO-1** would be implemented that would require preparation of an erosion control plan. The erosion control plan would identify best management practices that would reduce any impacts associated with soil erosion or loss of topsoil. In conjunction with **MM GEO-1** this impact would be less than significant.

**Would the project:**

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

**c) No Impact.** Subsidence is the gradual, local settling or sinking of the earth's surface with little or no horizontal motion. Subsidence is usually the result of gas, oil, or water extraction, hydrocompaction, or peat oxidation, and not the result of a landslide or slope failure. Ground surface effects related to subsidence are generally restricted to long

surface structures such as canals, drains, and sewers, which are sensitive to slight changes in elevation. Subsidence from earthquakes and other activities, including geothermal resources development, can disrupt drainage systems and cause localized flooding. The project area is not in an area known to be subject to any of these events according to the County of Imperial Seismic and Hazards Element (County of Imperial, 2015).

Well field programs covering production and injection plans are required by the Bureau of Land Management (BLM) and the California Geologic Energy Management Division (CalGEM) for each major geothermal project. Detrimental subsidence from geothermal development would be avoided through careful permit review by CalGEM and the County, establishment of standards for each project, and through impact mitigation and monitoring programs. Compliance with the well field program and adherence to standards established via coordination with CalGEM and the County would reduce any impacts associated with subsidence; therefore, there would be no impact.

Additionally, the well sites for which the proposed Zone Change and General Plan Amendment are required would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

**Would the project:**

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

**d) Less Than Significant.** Expansive soils are soils that expand when water is added and shrink when they dry out. This continuous change in soil volume can cause structures built on this soil to move unevenly and crack; expansive soils are commonly associated with clay rich soils.

The soils underlying the well sites are Pleistocene-Holocene and are primarily alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated (CGS, 2023b). These are primarily sedimentary rock that are mostly nonmarine but includes marine deposits near the coast. Additionally, construction of the exploratory wells would not result in the establishment of permanent structures, unless a viable geothermal resource is identified. Therefore, impacts associated with expansive soils are less than significant.

**Would the project:**

- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

**e) No Impact.** The exploratory wells associated with the proposed Project would not require the use of septic systems or alternative wastewater systems to accommodate wastewater needs. No impact would occur.

**Would the project:**

- f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

**f) No Impact.** A Paleontological Resource Assessment and Survey Report was prepared for *Truckhaven Geothermal Project: 3D Seismic Project* by Applied Earthworks, Inc. in March 2017 and an Addendum to the report was prepared by Rincon Consultants, Inc. in December 2018.

The 2017 Paleontological Resource Assessment and Survey Report assessment included a comprehensive review of published and unpublished literature and museum collections records maintained by the Natural History Museum of Los Angeles County. The purpose of the literature review and museum records search was to identify the geologic units underlying the proposed Project area and to determine whether previously recorded paleontological localities occur either within the proposed Project boundaries or within the same geologic units elsewhere. The museum records search was supplemented by a search of the University of California Museum of Paleontology's online collections database. Using the results of museum records search and literature review, the paleontological resource potential and Potential Fossil Yield Classification (PFYC) of geologic units within the Project area was recommended in accordance with the Society of Vertebrate Paleontology (2010) and BLM (2008) guidelines, respectively.

As a result of the 2017 study, the Pliocene to Holocene geologic units underlying the proposed Project area consist of undifferentiated younger alluvium, older alluvium, lacustrine (Lake Cahuilla), and terrace deposits of Quaternary age. These deposits have a recommended paleontological sensitivity of low (PFYC Class 2) to very high (PFYC Class 5). Consequently, the likelihood of impacting scientifically significant vertebrate fossils as a result of proposed Project development is high. Although a review of available online museum records indicated that no paleontological resources have been found within the proposed Project area, geologic units underlying the Project area have been known to yield significant fossils nearby. Concretions, sandstone bars, and visible Lake Cahuilla remnants are also considered unique geologic features within the proposed Project area.

The 2018 Addendum to the Paleontological Resource Assessment and Survey Report was prepared to summarize the results of Rincon's supplemental paleontological field survey, discuss the potential for impacts to paleontological resources, and provide additional mitigation measures, as necessary. The findings of the paleontological field survey described in the addendum are consistent with the results of the 2016 paleontological survey described in the paleontological resource assessment and survey for the project (Applied EarthWorks 2017). The report determined the proposed Project area is underlain by geologic units with PFYC 2 to 5 (low to very high paleontological sensitivity), in accordance with SVP (2010) and BLM (2016) guidelines.

In general, the potential for a given project to result in adverse impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project. The proposed Project entails the drilling, completion, testing and monitoring of the proposed wells and construction of associated access roads. Each of the proposed geothermal exploration wells would be located on separate, individual well pads. Ground disturbing activities are anticipated and the likelihood of impacting fossils is related to both the type and extent of disturbance and the geologic unit in which the disturbance occurs. Ground disturbances are proposed along areas underlain by previously undisturbed Arroyo Diablo Formation, Borrego Formation, Brawley Formation, Lake Cahuilla deposits, and Quaternary older alluvium, which have proven to yield vertebrate remains throughout the western Colorado Desert, including Imperial County, eastern San Diego County, and southern Riverside County. Ground disturbance planned for portions of the proposed Project area that are underlain Quaternary alluvium will also likely impact previously undisturbed lithology in those deposits. Significant fossils have not been reported within these deposits, but they may shallowly overlie older sensitive units at an unknown depth. Implementation of However, as part of the proposed Project, **APM PAL-1** and **APM PAL-2** as well as mitigation measure **MM PAL-1** below would reduce impacts associated with

paleontological resources to a less than significant level and would also be consistent with other federal and local laws and regulations. This impact is less than significant with mitigation incorporated.

### **Mitigation**

In addition to Applicant Proposed Measures **APM-GEO-1**, **APM-PAL-1** and **APM-PAL-2**, presented on **Table 7**, the following mitigation measures shall be implemented to reduce impacts to below a level of significance.

**MM GEO-1: Prepare Geotechnical Investigation.** Prior to approval of a grading or a building permit, a California certified civil/geotechnical engineer shall prepare a geotechnical investigation of the Project site that includes appropriate subsurface exploration, laboratory testing, and evaluation of potential geotechnical constraints to critical Project structures, including liquefaction, corrosion, seismic shaking and shrink swell evaluations. The report shall include specific recommendations to address issues identified in the geotechnical investigation of the Project site to meet State and County seismic building code requirements. An ICPDS approved third party environmental monitor shall be on-site during geotechnical investigations.

**MM PAL-1: Paleontological Resource Curation and Final Monitoring Report.** Upon completion of fieldwork, all significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossils specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and curated. Fossil specimens collected from BLM managed land remain the property of the Federal government and they must be placed in the approved museum repository identified on the Paleontological Resource Use Permit. Fossil specimens collected from DPR-managed land remain the property of the State of California and must also be delivered to an accredited regional museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of Omi 5, LLC.

At the conclusion of laboratory work and museum curation, a Final Paleontological Monitoring Report shall be prepared to describe the results of the paleontological mitigation monitoring efforts associated with the Project. The report will include a summary of the field and laboratory methods, an overview of the Project area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations and will be submitted to the Imperial County Planning and Development Services Department. If the monitoring efforts produced fossils, then a copy of the Final Paleontological Monitoring Report will also be submitted to the curation facility.

## **VIII. GREENHOUSE GAS EMISSIONS.**

This section describes the regulatory setting and potential global climate change effects from implementation of the proposed Project. GHG emission modeling was performed through use of the CalEEMod Version 2016.3.2. The CalEEMod model output files were included as Appendix G in the 2019 MND.

### ***Regulatory Setting***

Significant legislative and regulatory activities directly and indirectly affect climate change and GHGs in California. The primary climate change legislation in California is AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing greenhouse gas emissions in California, and AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. In addition to AB 32, Executive Order B-30-15 was issued on April 29, 2015



that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. In September 2016, AB 197 and SB 32 codified into statute the GHG emission reduction targets provided in Executive Order B-20-15.

CARB is the state agency charged with monitoring and regulating sources of emissions of GHGs in California that contribute to global warming in order to reduce emissions of GHGs. The CARB Governing Board approved the 1990 GHG emissions level of 427 million tons of CO<sub>2</sub> equivalent (MtCO<sub>2</sub>e) on December 6, 2007. Therefore, in 2020, annual emissions in California are required to be at or below 427 MtCO<sub>2</sub>e. The CARB Board approved the Climate Change Scoping Plan (Scoping Plan) in December 2008, the First Update to the Scoping Plan in May 2014, and California's 2017 Climate Change Scoping Plan in November 2017. The Scoping Plans define a range of programs and activities that will be implemented primarily by state agencies but also include actions by local government agencies. Primary strategies addressed in the Scoping Plans include new industrial and emission control technologies; alternative energy generation technologies; advanced energy conservation in lighting, heating, cooling, and ventilation; reduced-carbon fuels; hybrid and electric vehicles; and other methods of improving vehicle mileage. Local government will have a part in implementing some of these strategies. The Scoping Plans also call for reductions in vehicle-associated GHG emissions through smart growth that will result in reductions in vehicle miles traveled (CARB 2008, 2014, 2017).

**Would the project:**

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

**a) Less Than Significant.** Neither the County of Imperial nor the ICAPCD has established significance thresholds for GHG emissions. To establish context in which to consider the GHG emissions created from the proposed Project, this analysis reviewed guidelines used by other public agencies in California and found the most conservative GHG emissions threshold is detailed in *CEQA & Climate Change*, prepared by California Air Pollution Control Officers Association (CAPCOA, 2008), which recommends a threshold of 900 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e) per year from any project. It should also be noted that a direct comparison of construction GHG emissions with long-term thresholds would not be appropriate, since construction emissions are short-term in nature and would cease upon completion of construction. Other Air Districts, including the SCAQMD, recommend that GHG emissions from construction activities be amortized over 30 years, when construction emissions are compared to operational-related GHG emissions thresholds.

The CalEEMod model used to calculate the criteria pollutant emissions for the air quality analysis was also utilized to calculate the GHG emissions associated with construction of the Truckhaven Geothermal Exploration Project. The CalEEMod model calculated GHG emissions generated from the construction of one of the six exploratory wells that would be constructed as part of the proposed project as well as from the on-going geothermal well monitoring. **Table 15** shows the estimated GHG emissions from one well site and the total construction-related GHG emissions from all six exploratory well sites.

**TABLE 15. PROPOSED GREENHOUSE GAS EMISSIONS**

Activity	Greenhouse Gas Emissions in Metric Tons/Year			
	CO2	CH4	N2O	CO2e
Exploratory Well Construction	34.41	0.01	0.00	34.67

**TABLE 15. PROPOSED GREENHOUSE GAS EMISSIONS**

Activity	Greenhouse Gas Emissions in Metric Tons/Year			
	CO2	CH4	N2O	CO2e
Well Pad & Access Road Construction	10.54	0.00	0.00	9.47
Well Drilling	148.41	0.02	0.00	149.02
Well Testing	2.51	0.00	0.00	2.52
Well Clean-Up	3.28	0.00	0.00	3.31
Total Construction Emissions for One Well Site	164.74	0.03	0.00	165.46
Total Construction Emissions for Six Well Sites	988.46	0.18	0.00	992.77
<b>Total Exploratory Well Construction Emissions</b>	<b>1,022.87</b>	<b>0.20</b>	<b>0.00</b>	<b>1,027.44</b>
<b>Total Construction Emissions Amortized over 30 years</b>	<b>34.10</b>	<b>0.01</b>	<b>0.00</b>	<b>34.25</b>
<b>Geothermal Well Monitoring</b>	<b>0.56</b>	<b>0.00</b>	<b>0.00</b>	<b>0.56</b>
<b>Total Project GHG Emissions</b>	<b>34.66</b>	<b>0.01</b>	<b>0.00</b>	<b>34.81</b>
<b>GHG Emissions Threshold of Significance<sup>1</sup></b>				<b>900</b>
<b>Exceed Threshold?</b>				<b>No</b>

Notes: (1) GHG emissions threshold from CAPCOA, 2008.

Source: CalEEMod Version 2016.3.2 (see Appendix B).

As shown in **Table 15**, construction and operation of the proposed Project would generate 34.81 MtCO<sub>2</sub>e per year, which would not exceed the annual GHG emissions threshold of 900 MtCO<sub>2</sub>e. As such, it could be concluded that the Project's construction-related GHG contribution is not "cumulatively considerable" and is therefore less than significant under CEQA.

Therefore, implementation of the exploratory wells for which the proposed Zone Change and General Plan Amendment are required would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, and impacts would be less than significant.

**Would the project:**

- b) Conflict with an applicable plan or policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

**b) No Impact.** The California State Legislature adopted AB 32 in 2006, that requires the State's GHG emissions by 2020 to meet the GHG emissions level created in 1990 and adopted AB 197 and SB 32 in 2016, that requires the State's GHG emissions to be 40 percent below 1990 levels by 2030.

Neither the County of Imperial nor the ICAPCD has adopted a climate action plan to reduce GHG emissions in the proposed Project area. As such, the only applicable plans for reducing GHG emissions for the proposed Project area are statewide plans that include AB 32, AB 197, and SB 32. As shown above in impact (a), the proposed Project would generate 33.09 MTCO<sub>2</sub>e per year from construction of the proposed Project and as discussed above in impact (a), only negligible GHG emissions would be created from operation of the proposed Project. In addition, it should be noted that the proposed Project has the potential to assist the State in meeting its GHG reduction goals provided in AB 32,

AB 197, and SB 32, as the project consists of six exploratory geothermal wells that have the potential of creating a carbon-free electricity in the future, if any of the wells are found to be commercially viable.

Therefore, the proposed Project would not conflict with any applicable plan, policy, or regulation adopted for reducing the emissions of GHGs. There would be no impact.

## IX. HAZARDS AND HAZARDOUS MATERIALS.

### Would the project:

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

**a) Less Than Significant.** Material that is to be transported, stored, or disposed of during project construction and operation has the potential to contain hazardous materials and could present a hazard to construction workers, the public, or the environment if improperly managed.

Vehicles and equipment used for exploratory well construction would contain or require the temporary, short-term use of potentially hazardous substances, such as fuels, lubricating oils, and hydraulic fluid. Hazardous substances would be stored in transportable containment trailers at locations within the construction staging area to minimize potential for accidental releases and/or spills. No other hazardous or potentially hazardous materials will be brought to the exploratory well sites. Further, the proposed Project would be required to comply with all applicable rules and regulations involving hazardous materials, including the State of California CCR Title 23 Health and Safety Regulations, the California Division of Occupational Safety and Health (Cal/OSHA) requirements, the Hazardous Waste Control Act, the California Accidental Release Prevention (CalARP) Program, and the California Health and Safety Code.

Compliance with these measures, along with **APM-HAZ-1** and **APM-HAZ-3**, would reduce any potential risk or impact associated with the transport, use, or disposal of hazardous materials. This impact is less than significant.

### Would the project:

- 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?

**b) Less Than Significant.** As noted above, the exploratory wells for which the proposed Zone Change and General Plan Amendment are required would require the storage of hazardous materials; however, hazardous substances would be stored in transportable containment trailers at locations within the construction staging area to minimize potential for accidental releases and/or spills. No other hazardous or potentially hazardous materials will be brought to the well sites. Further, the proposed Project would be required to comply with all applicable rules and regulations involving hazardous materials, including the State of California CCR Title 23 Health and Safety Regulations, the California Division of Occupational Safety and Health (Cal/OSHA) requirements, the Hazardous Waste Control Act, the California Accidental Release Prevention (CalARP) Program, and the California Health and Safety Code.

Compliance with these measures would reduce any potential risk or impact associated with the release of hazardous materials into the environment. This impact is less than significant.

**Would the project:**

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

**c) No Impact.** The nearest school to the exploratory wells associated with the Truckhaven Geothermal Project is West Shores High School, approximately 3 miles to the northeast to the closest well site. The proposed Project would not result in a release of hazardous emissions, hazardous or acutely hazardous materials, or substances within 0.25 mile of an existing or proposed school. There would be no impact.

**Would the project:**

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

**d) No Impact.** A review of federal and state standard and supplemental databases indicated that the exploratory well sites are not located within any identified hazardous material site pursuant to Government Code Section 65962.5. No hazardous materials sites are located within 0.25 mile of the project area (DTSC 2109; SWRCB 2019). The exploratory wells for which the proposed Zone Change and General Plan Amendment are required would not create a significant hazard to the public or environment. No impacts would occur.

**Would the project:**

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

**e) Less Than Significant.** As shown on **Figure 5**, all of the exploratory well sites included in the Project are located within 1 mile of the Salton Sea Airport, a public use airport that is privately owned by Burrtec Waste Industries (AirNav.Com, 2023). The Salton Sea Airport is included within the Airport Land Use Compatibility Plan for Imperial County Airport (County of Imperial, 1996).

Several of the exploratory wells would be located as near as 400 feet from the Salton Sea Airport runway. They are proximate to the A, B1 and B2 compatibility zones that have been designated by the *Imperial County Airport Land Use Compatibility Plan* (Imperial County, 1996). Workers involved in constructing the well pads would be onsite for approximately 30 to 45 days as the well pads are developed.

The proposed exploratory wells would not present a hazard to the airport operations for the Salton Sea Airport as determined by the Airport Land Use Commission (County of Imperial, 2019). Once the well pads are developed there would be no people permanently residing or working in the area. Following construction, no permanent workers would be located on site and work in the area would be restricted to maintenance activities at well sites that are determined to have a viable geothermal resource; the exploratory wells do not involve housing. In addition, according to the FAA Notice Criteria tool, and in compliance with **APM-HAZ-2**, the Applicant will be required to file FAA Form 7460-1, Notice of Proposed Construction or Alteration, due to the height of the drill rigs proximate to the Salton Sea Airport. The FAA would make a determination about the project's suitability or require project modifications to ensure aviation safety. Assuming the Imperial County Airport Land Use Commission and the FAA approve the project, impacts would be less than significant.

In accordance with Condition S-2 of CUP#18-0038, Well #87-6 shall be located no closer than one-thousand (1,000) feet from the Salton Sea Airport Runway.

**Would the project:**

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

**f) No Impact.** As noted under Impact e) above, the Salton Sea Airport is a "public airport" that is privately owned and is included in the Imperial County Airport Land Use Plan. There are no private airstrips proximate to the proposed Project area. Thus, there would be no impact under this criteria.

**Would the project:**

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

**g) No Impact.** The construction of the exploratory wells associated with the proposed Project would not involve blocking or restricting any access routes. The exploratory wells would not interfere with emergency response plans or operations near the well sites. There would be no impact.

**Would the project:**

- h) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

**h) No Impact:** The proposed Project would not occur within a State Responsibility Area (SRA). No SRA fire hazard severity zones (FHZAs) have been designated in this part of Imperial County (CalFire 2023). The proposed Project area is classified as a Local Responsibility Area (LRA) – Unincorporated and the Bureau of Land Management (BLM) land is managed as a Federal Responsibility Area (FRA) (Calfire, 2007). There would be no impact.

## X. HYDROLOGY AND WATER QUALITY.

### Would the project:

- a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

**a) Less Than Significant.** No known or reasonably expected surface water quality issues are anticipated to result from implementation of the exploratory wells; however, because ground-disturbing activities will occur in an area greater than one acre, a SWPPP will be developed that implements BMPs (as previously discussed) that sufficiently control degradation of water quality on site and adjacent to a drill pad or access road. In addition, the SWPPP will be implemented such that stormwater discharges would not adversely impact human health or the environment, nor contribute to any exceedances of any applicable water quality standard contained in the Basin Plan (Lahontan Regional Water Quality Control Board). This impact is less than significant.

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

**b) Less Than Significant.** Construction of the exploratory wells associated with the proposed Project would require the use of 50,000 gallons of water per day; however, the use of water would be temporary in nature (30 days per proposed well site), and water necessary for these activities would be purchased from the Coachella Valley Water District via a fire hydrant. The exploratory wells would not result in a decrease in groundwater supplies and would not interfere with groundwater recharge; therefore, the exploratory wells would result in less than significant impacts associated with groundwater depletion.

- 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:

- 1) Result in substantial erosion or siltation on- or off-site;
- 2) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- 3) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff;

**c) Less Than Significant.** As previously discussed, the construction of the exploratory wells would result in ground-disturbing activities in an area greater than one acre; therefore, a SWPPP would be required. The SWPPP would be developed to identify BMPs that sufficiently avoid any onsite or offsite erosion and runoff from areas proposed for

ground disturbance. Operation of the exploratory wells would not have an impact of a stormwater drainage system as the wells would not result in an increase in the amount of runoff from any proposed well site. Impacts would, therefore, be less than significant.

It should be noted that proposed well sites 18-32, and 47-32 would require access roads that are located within a 100-year Federal Emergency Management Administration (FEMA) floodplain. Prior to construction, a Waters of the US determination would be required to determine the appropriate permitting requirements. It is possible that the proposed Project would require compliance with Section 401 and 404 of the Clean Water Act (CWA) and Fish and Game Code 1600. If it is determined the exploratory wells associated with the proposed Project would result in impacts to jurisdictional waters, the appropriate permits will be secured prior to impacts to the waters. This impact is less than significant.

Due to potential impacts associated with construction of the access roads for proposed well pads 47-32 and 18-32, the proposed Project would implement Mitigation Measure **MM-BIO-10** to reduce impacts associated with state or federal jurisdictional non-wetland waters.

- d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

**d) Less Than Significant.** The exploratory wells associated with the proposed Project are not located in an area at risk of tsunami or seiche (Count of Imperial 1997). No impact would occur.

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

**e) No Impact.** As discussed above, the exploratory wells would be compliant with all city, state, and federal regulations, including compliance with the NPDES permits with the implementation of BMPs; compliance with the referenced regulations would reduce any potential impact associated with a water quality control plan to a less than significant. Additionally, as discussed above, implementation of the exploratory wells would not require water supplies beyond the supplies purchased from Coachella Valley Water District. No impact would occur.

## XI. LAND USE AND PLANNING.

### Would the project:

- a) Physically divide an established community?

**a) No Impact.** The exploratory wells for which a zone change and general plan amendment are required would not physically divide an established community, as no facilities are proposed that would prohibit travel throughout the project area. No impact would occur.

### Would the project:

- b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or

regulation adopted for the purpose of avoiding or mitigating an environmental effect?

**b) No Impact.** The exploratory wells for which the proposed Zone Change and General Plan Amendment are required are located within the Truckhaven Geothermal Leasing Area of Imperial County (County of Imperial 2015); the land uses associated with the proposed Project are allowable under the Imperial County Renewable Energy and Transmission Element (2015). The proposed Project is not in conflict with the County adopted land- use plans or policies. It is consistent with the County's General Plan, the Renewable Energy and Transmission Element Update, and the applicable sections of the Imperial County Land Use Ordinance (Title 9); therefore, no impact would occur.

## XII. MINERAL RESOURCES.

### Would the project:

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

**a) No impact.** A number of mineral resources in Imperial County are currently being extracted, including gold, gypsum, sand, gravel, lime, clay, stone, kyanite, limestone, sericite, mica, tuff, salt, potash, and manganese. Several issues influence the extraction of mineral deposits in Imperial County, including the location of geologic deposition, the potential for impacts to the environment, and land use conflicts. As a result, the extraction of mineral resources is limited to a relatively small number of sites throughout the County.

Construction of the exploratory wells proposed Zone Change and General Plan Amendment are required would not result in any impacts to known mineral resources or mineral resource recovery sites. Additionally, the exploratory wells would not preclude future mineral resource exploration throughout the proposed Project area. No impacts would occur.

### Would the project:

- 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?

**b) No Impact.** As noted in Impact a), implementation of the exploratory wells associated with the proposed Project would not result in any impacts to known mineral resources or mineral resource recovery sites. Additionally, the exploratory wells would not preclude future mineral resource exploration throughout the proposed Project area. No impacts would occur.

## XIII. NOISE.

### Would the project result in:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?



**a) Less Than Significant With Mitigation Incorporated** The proposed Zone Change and General Plan Amendment would facilitate development of six exploratory geothermal wells. Both construction and operation of the exploratory wells would have the potential to generate noise in excess of standards and have been analyzed separately below.

**Construction-Related Noise**

Construction activities for the exploratory wells associated with the proposed Project are anticipated to begin in early 2024. Construction of each well will occur sequentially so that wells are constructed one at a time. Each well would take approximately 30 to 45 days to complete, or (conservatively) approximately one year for all six wells. The anticipated construction phases for each well location would include: (1) Well pad and access road construction; (2) Well drilling; (3) Well testing; and (4) Well clean-up.

The General Plan Noise Element exempts construction activities from the applicable noise standards, provided that construction activities are limited to between 7 a.m. and 7 p.m. Monday thru Friday and between 9 a.m. and 5 p.m. on Saturday and do not exceed 75 dBA Leq at the nearby homes. The well pad and access road construction, well testing, and well clean-up activities will adhere to these time limits, as such the construction noise level threshold for these activities is 75 dBA Leq at the property lines of the nearest homes.

However, the well drilling phase of construction is required to operate 24-hours per day in order to minimize a risk of cave-in of the borehole. As such, the noise level threshold for the well drilling phase of construction is 45 dBA at the property line of the nearest home, which is based on the most restrictive nighttime residential noise standard.

The Federal Highway Administration (FHWA) compiled noise level data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. **Table 16** provides a list of the construction equipment measured, along with the associated measured noise emissions and measured percentage of typical equipment use per day. From this acquired data, FHWA developed the Roadway Construction Noise Model (RCNM). The RCNM, which uses the Spec 721.560 L<sub>max</sub> at 50 feet, was used to calculate the construction equipment noise emissions (see 2019 MND; Appendix H).

**TABLE 16: CONSTRUCTION EQUIPMENT EMISSIONS AND USAGE FACTORS**

Equipment	Acoustical Use Factor <sup>1</sup> (Percent)	Spec 721.560 L <sub>max</sub> @ 50 Feet <sup>2</sup> (dBA, slow <sup>3</sup> )	Actual Measured L <sub>max</sub> @ 50 feet <sup>4</sup> (dBA, slow)
Auger Drill Rig	20	85	N/A
Backhoe	40	80	78
Compressor (air)	40	80	78
Concrete Mixer Truck	40	85	79
Concrete Pump	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flatbed Truck	40	84	74

**TABLE 16: CONSTRUCTION EQUIPMENT EMISSIONS AND USAGE FACTORS**

Equipment	Acoustical Use Factor <sup>1</sup> (Percent)	Spec 721.560 Lmax @ 50 Feet <sup>2</sup> (dBA, slow <sup>3</sup> )	Actual Measured Lmax @ 50 feet <sup>4</sup> (dBA, slow)
Front End Loader	40	80	79
Generator	50	82	81
Gradall (Forklift)	40	85	83
Mounted Impact Hammer	20	90	90
Paver	50	85	77
Roller	20	85	80
Tractor	40	84	N/A
Welder/Torch	40	73	74

Notes:

1. Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
2. Spec 721.560 is the equipment noise level utilized by the Roadway Construction Noise Model program.
3. "Slow" response averages sound levels over 1-sec.increments. A "fast" response averages sound levels over 0.125- sec .increments.
4. Actual Measured is the avg. noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

Source: Federal Highway Administration, 2006.

The anticipated areas of construction and construction equipment that will be utilized during development of each area were obtained from the Project applicant. For each proposed well pad area, all equipment was placed at the shortest distance of the proposed well pad area to the nearest home. The results are shown below in **Table 17**.

**TABLE 17. CONSTRUCTION NOISE LEVELS AT NEARBY HOMES, WITHOUT MITIGATION**

Sensitive Receptor Location	Distance to Receptor (miles)	Construction Noise Levels (dBA L <sub>eq</sub> ) by Phase <sup>(2)</sup>			
		Well Pad & Access Road Construction	Well Drilling	Well Testing	Well Cleanup
Nearest Home to Well #32-5	0.34	53	53	51	53
Nearest Home to Well #47-5	0.44	51	51	51	51
Nearest Home to Well #18-32	0.40	52	52	52	52
Nearest Home to Well #47-32	0.20	58	58	56	56
Nearest Home to Well #14-4	0.28	55	55	55	55
Nearest Home to Well #17-4	0.58	49	49	49	49
<b>Construction Noise Threshold <sup>(1)</sup></b>		<b>75</b>	<b>45</b>	<b>75</b>	<b>75</b>
<b>Exceed Threshold?</b>		No	Yes	No	No

Notes:

- (1) Construction Noise Thresholds from the General Plan Noise Element (County of Imperial, 2015).
- (2) Source: RCNM Version 1.1 (2019 MND; Appendix C).

Source: RCNM Version 1.1 (2019 MND; Appendix C).

**Table 17** shows that construction noise created during well pad and access road construction, well testing, and well cleanup and abandonment would be below the County's 75 dBA noise standard that is applicable when construction activities are exempt from the County's residential noise standards. **Table 17** also shows that well drilling activities that would occur 24-hours per day until completion of the well, would exceed the County's residential nighttime noise standard of 45 dBA at the nearest home to each of the six proposed well sites. This would be considered a short-term, significant impact.

Mitigation measure **MM-NOI-2** requires the implementation of various sound control measures during well drilling phase of construction that are anticipated to reduce nighttime noise levels by up to 15 dB. These include using noise reduction mufflers and engine shrouds on equipment; limiting non-essential equipment and truck deliveries to daytime hours, and placing the portable office and any storage containers between the drilling equipment and nearest home to act as a sound barrier<sup>2</sup>. The well drilling phase of construction has been recalculated based on implementation of **MM-NOI-2** and the results are shown in **Table 18**. As shown in **Table 18**, with implementation of **MM-NOI-2**, the well drilling noise levels would be lowered to within the County's residential nighttime noise standard of 45 dBA at the nearest home to each of the six proposed well sites. Impacts would be less than significant with implementation of **MM NOI-2**.

<sup>2</sup> **MM NOI-1**, identified in the 2019 MND, pertained only to the geophysical survey activities and is not applicable to the proposed geothermal exploration wells. For this reason, **MM NOI-1** is not included in this Initial Study.

**TABLE 18: CONSTRUCTION NOISE LEVELS AT NEARBY HOMES, WITH MITIGATION**

Sensitive Receptor Location	Distance to Receptor (mile)	Construction Noise Levels (dBA L <sub>eq</sub> ) by Phase <sup>(2)</sup>			
		Well Pad & Access Road Construction	Well Drilling <sup>(1)</sup>	Well Testing	Well Cleanup
Nearest Home to Well #32-5	0.34	53	38	51	53
Nearest Home to Well #47-5	0.44	51	36	51	51
Nearest Home to Well #18-32	0.40	52	37	52	52
Nearest Home to Well #47-32	0.20	58	43	56	56
Nearest Home to Well #14-4	0.28	55	40	55	55
Nearest Home to Well #17-4	0.58	49	34	49	49
<b>Construction Noise Threshold <sup>(2)</sup></b>		<b>75</b>	<b>45</b>	<b>75</b>	<b>75</b>
<b>Exceed Threshold?</b>		No	No	No	No

Notes:

- (1) Well Drilling noise levels includes implementation of MM NOI-2.
- (2) Construction Noise Thresholds from the General Plan Noise Element (County of Imperial, 2015).

Source: RCNM Version 1.1 (2019 MND; Appendix C).

**Operation-Related Noise**

The proposed Project consists of development of six exploratory geothermal wells, which would be tested after completion of the well drilling phase to determine the commercial potential of each well. If a well is judged to have commercial potential, well monitoring may be continued indefinitely until the applicant proceeds with the approval process to place the well into commercial service. Therefore, the operational emissions would be limited to well monitoring activities that may be limited to weekly or monthly vehicle trips to the well sites to obtain pressure and temperature measurements. As such, only nominal operational noise levels would be created from the on-going operation of the exploratory wells and operations-related noise would be less than significant.

Accordingly, with implementation of **MM-NOI-2**, the construction of the exploratory wells for which the proposed Zone Change and General Plan Amendment are required would not expose persons to noise levels in excess of standards established by Imperial County.

**Would the project result in:**

- b) Generation of excessive groundborne vibration or groundborne noise levels?

**b). Less Than Significant.** Construction activities would require the operation of off-road equipment and trucks that are known sources of vibration. Construction activities may occur as near as 0.2 mile (1,060 feet) from the home located proximate to proposed Exploratory Well# 47-32.

However, it should be noted that the vibration study was limited to calculating the vibration propagation rates of the existing geological conditions of the proposed Project area and does not provide any information about the proposed project vibration levels at the nearby sensitive homes, however the average attenuation rate of 1.28 calculated by the vibration study has been utilized to calculate the vibration levels at the nearby homes. Since neither the County's

General Plan nor the Municipal Code provide any thresholds related to vibration, Caltrans guidance has been utilized, which defines the threshold of perception from transient sources at 0.25 inch-per-second peak particle velocity (PPV). **Table 19** shows the typical PPV produced from some common construction equipment.

**TABLE 19: TYPICAL CONSTRUCTION EQUIPMENT VIBRATION EMISSIONS**

Equipment	Peak Particle Velocity in inches per second at 25 feet	Vibration Level (Lv) at 25 feet
Pile Driver (impact)	0.644	104
Pile Driver (sonic)	0.170	93
Clam Shovel Drop	0.202	94
Hydromill in soil	0.008	66
in rock	0.017	75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drill	0.089	87
Loaded truck (off road)	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: Federal Transit Administration 2006.

From the list of equipment shown in **Table 19**, a pile driver with a vibration level of 0.644 inch-per-second PPV would be the source of the highest vibration levels of all equipment utilized during construction activities for the proposed Project. Based on typical propagation rates this would result in a vibration level of 0.001 inch-per-second PPV at the nearest home to construction activities. The construction-related vibration levels would be within the 0.25 inch-per-second PPV threshold detailed above. Construction-related vibration impacts would be less than significant.

The ongoing operation of the proposed Project would not result in the creation of any known vibration sources. Therefore, a less than significant vibration impact is anticipated from the operation of the proposed Project.

Accordingly, the Project would not expose persons to excessive groundborne vibration or groundborne noise levels.

**Would the project result in:**

- 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?

**c) No Impact.** The Salton Sea Airport is a privately owned, public use airport that is proximate to several well sites as well as receiving lines for the geophysical survey. Noise contours have not been prepared for the Salton Sea Airport

and current airport activity at Salton Sea Airport is negligible (Imperial County, 2015). According to AirNav.com, operations for the year ending April 2023 are 29 per month (AirNav.com, 2023). The Airport Land Use Compatibility Plan (ALUCP) did prepare compatibility zones for the Salton Sea Airport that are based on a proposed future concept of the future configuration of the airport. This proposed future concept appears to include a north and south oriented runway that does not currently exist (Imperial County, 1996).

Proposed Well Site #47-5 is located as near as 400 feet south of the runway for Salton Sea Airport. Construction of this well pad would take approximately 30 to 45 days. During this period approximately 25 people would be exposed to noise from the airport. However, given the low volume of operations at Salton Sea Airport (approximately 1 flight per day), the proposed Project would not expose people working in the project area to excessive noise levels. Upon completion of the well drilling, the proposed Project would not result in any permanent population proximate to the airport. There would be no impact.

### Mitigation

In addition to Applicant Proposed Measures **APM-NOI-1 through APM-NOI-3**, presented on **Table 7**, the following mitigation measure shall be implemented to reduce impacts to below a level of significance.

**MM-NOI-2** <sup>(2)</sup>: During construction of the exploratory wells, the project applicant shall require the well drilling contractor to implement the following noise reduction measures:

- All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer);
- All non-essential well drilling equipment and truck deliveries shall be limited to operating during the allowable construction times of between 7 a.m. and 7 p.m. Monday thru Friday and between 9 a.m. and 5 p.m. on Saturday;
- The portable office and any storage containers used during the well drilling phase shall be placed between the drilling equipment and nearest home, in order to effectively act as a sound wall and provide attenuation to the nearest home.

## XIV. POPULATION AND HOUSING.

### Would the project:

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

**a) No Impact.** The exploratory wells associated with the proposed Zone Change ZC #22-0004 and General Plan Amendment #22-0003 would not induce unplanned population growth either directly or indirectly. Each geothermal would employ about 25 people in 6-person shifts. In accordance with Condition G20 of CUP 18-0038, local labor would be used for construction and operation of the exploratory wells, to the maximum extent possible. Additionally, no residential units or businesses are included in the Project and any new access roads would be temporary and only used for the pro.

No development or infrastructure improvements are proposed that would induce unplanned growth in the area. No population impacts would occur and no mitigation would be required.

**Would the project:**

- b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

**b) No Impact.** The exploratory wells for which the proposed Zone Change and General Plan Amendment are required would not displace substantial numbers of persons or housing, necessitating their replacement and construction elsewhere. The Project does not include the demolition of existing housing, nor the construction of replacement housing units. No impacts to population or housing would occur and no mitigation would be required.

**XV. PUBLIC SERVICES.**

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

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**1) Fire Protection. No Impact.** The exploratory wells associated with the proposed Project would not 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 to maintain acceptable service ratios, response times or other performance objectives for any public services. The exploratory wells would not invite new populations to the proposed well locations that would result in the permanent increased need of fire protection services. Standard best management practices (BMPs) such as having fire extinguishers available on the site and around the drilling rig, making water that is used for drilling available for firefighting, and allowing smoking only in designated areas would minimize the risk for fire in an area where the risk is already low. There would be no impact.

**2) Police Protection. No Impact.** The exploratory wells associated with the proposed Project would not 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 to maintain acceptable service ratios, response times or other performance objectives for any public services. The proposed Project would not invite new populations to the proposed well locations that would result in the permanent, and increased need of police protection services. There would be no impact.

**3) Schools. No Impact.** The exploratory wells associated with the proposed Project would not 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 to maintain acceptable service ratios, response times or other

performance objectives for any public services. The proposed wells would not invite new populations to the proposed well locations that would result in the permanent and increased need for schools. There would be no impact.

**4) Parks. No Impact.** The exploratory wells would not 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 to maintain acceptable service ratios, response times or other performance objectives for any public services. The exploratory wells would not involve the modification of any parks or their facilities. Furthermore, the exploratory wells would not invite new populations to the proposed well locations that would result in the permanent and increased need for parks. There would be no impact.

**5) Other Public Facilities. No Impact.** The exploratory wells associated with the proposed Project would not 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 to maintain acceptable service ratios, response times or other performance objectives for any public services. The exploratory wells would not involve the modification of any public facilities. The exploratory wells would not attract new populations to the County that would result in the permanent and increased need of public facilities. There would be no impact.

## **XVI. RECREATION.**

### **Would the project:**

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

**a) Less Than Significant Impact.** The exploratory wells for which a zone change and general plan amendment would be required would not increase the use of existing neighborhood and regional parks, which typically results from an increase in housing or population in an area. The proposed project would not result in an increase in housing or residents in the project vicinity and no increase in the use of existing neighborhood park, regional park or other recreational facility would occur. Impacts would be less than significant, and no mitigation measures would be required.

### **Would the project:**

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

**b) Less Than Significant Impact.** The number of new workers required for construction and testing of geothermal exploration wells and associated facilities would be relatively low (approximately 40 local workers) and would not require construction or expansion of recreational facilities that might have an adverse effect on the environment. Therefore, impacts would be less than significant, and no mitigation measures would be required.



**XVII. TRANSPORTATION / TRAFFIC.**

**Would the project:**

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

**a) Less Than Significant.** Primary highway access to the Project area and some of the proposed well sites is from State Highway 86 to Airpark Drive. Access to the rest of the proposed well sites is from State Highway 86 to County Dump Road. Both Airpark Drive and County Dump Road are two-lane roads with very low traffic volumes.

The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The Project does not propose any features that are inconsistent with applicable policies of the County's Circulation and Scenic Highway Element. Further, the well drilling and operations would require 40 one-way trips for construction workers; up to 6 small service truck trips for supply deliveries; 6 trucks to deliver aggregate for well pad construction; and 13 daily truck trips for water delivery for a total of approximately 60 one-way trips daily.

The "temporary" addition of project traffic to existing roadways and intersection is not anticipated to change their levels of service to LOS C or worse. Therefore, the Project would not conflict with Objective 1.12 of the County's General Plan Circulation and Scenic Highway Element which prohibits new development proposals which results in Level of Service D, E or F. Impacts under this criteria would be less than significant and no mitigation would be required.

**Would the project:**

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

**b) Less Than Significant.** The Office of Planning and Research provides screening criteria that allow small projects (from a traffic standpoint) to screen out of a detailed vehicle miles travelled (VMT) analysis based on the number of daily trips it generates. Projects that generate fewer than 110 trips per day can be presumed to result in less than significant VMT impacts.

As noted under item a) above, construction of the exploratory wells for which a zone change and general plan amendment would be required would generate approximately 60 trips per day. Thus, the project will not generate more than 110 trips per day. Therefore, the project meets the small project screening criteria, will not have significant VMT impact and would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision

**Would the project:**

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

**c) Less Than Significant.** The exploratory wells associated with the proposed Project do not include any alteration to the existing public road network. The access roads to the exploratory wells associated with the proposed Project would

be designed to accommodate trucks delivering heavy drill equipment to each proposed well site. The access roads would not be open to the public and would only be maintained as long as the proposed well site is being constructed or in use. Once a proposed well site is retired or abandoned, the access road would be return to the existing condition. This impact would be less than significant.

**Would the project:**

- d) Result in inadequate emergency access?

**d) No Impact.** The construction of the exploratory wells associated with the proposed Project would not involve blocking or restricting any access routes. The exploratory wells would not interfere with emergency response plans or operations near the proposed Project area. No impacts would occur.

**XVIII. TRIBAL CULTURAL RESOURCES.**

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

- a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

***Regulatory Framework***

**Assembly Bill 52**

California Assembly Bill 52 of 2014 (AB 52) was enacted on July 1, 2015 and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources:

- 1) "Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe" and meets either of the following criteria: 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

- 2) A cultural 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.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the formal consultation process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

### **Senate Bill 18 (SB 18)**

SB 18 (California Government Code §65352.3) requires local governments to contact, refer plans to and consult with tribal organizations prior to making a decision to adopt or amend a general or specific plan. Tribal organizations eligible to consult have traditional lands in a local government's jurisdiction and are identified by the Native American Heritage Commission (NAHC). As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

**a) and b) Less Than Significant With Mitigation Incorporated.** As required by SB 18 and AB 52, the County sent consultation notices to Native American tribal representatives on December 20, 2023 and December 28, 2023. Specifically, AB-52 Consultation notices were sent to the Quechan and Torres-Martinez Desert Cahuilla Indian Tribes. SB-18 Consultation Letters were sent to the tribes/tribal representatives listed below (See Appendices D-1 and D-2):

#### **SB-18 Consultation List**

- Agua Caliente Band of Cahuilla Indians, Patricia Garcia, Director of Historic Preservation
- Barona Group of the Capitan Grande, Art Bunce, Attorney
- Campo Band of Diegueno Mission Indians, Ralph Goff, Chairperson
- Ewiaapaayp Band of Kumeyaay Indians, Robert Pinto, Chairperson
- Ewiaapaayp Band of Kumeyaay Indians, Michael Garcia, Vice Chairperson
- Iipay Nation of Santa Ysabel, Clint Linton, Director of Cultural Resources
- Inaja-Cosmit Band of Indians, Rebecca Osuna, Chairperson
- Jamul Indian Village, Erica Pinto, Chairperson
- Jamul Indian Village, Lisa Cumper, Tribal Historic Preservation Officer
- Kwaaymii Laguna Band of Mission Indians, Carmen Lucas
- La Posta Band of Diegueno Mission Indians, Gwendolyn Parada, Chairperson
- Manzanita Band of Kumeyaay Nation, Angela Elliott Santos, Chairperson
- Mesa Grande Band of Diegueno Mission Indians, Michael Linton, Chairperson
- Quechan Tribe of the Fort Yuma Reservation, Jill McCormick, Historic Preservation Officer

**SB-18 Consultation List**

- Quechan Tribe of the Fort Yuma Reservation, Manfred Scott, Acting Chairman
- Quechan Tribe of the Fort Yuma Reservation, Jordan Joaquin, President, Quechan Tribal Council
- San Pasqual Band of Diegueno Mission Indians, Allen Lawson, Chairperson
- San Pasqual Band of Diegueno Mission Indians, John Flores
- Santa Rosa Band of Cahuilla Indians, Lovina Redner, Tribal Chair
- Soboba Band of Luiseno Indians, Jessica Valdez, Cultural Resource Specialist
- Soboba Band of Luiseno Indians, Joseph Ontiveros, Tribal Historic Preservation Officer
- Sycuan Band of the Kumeyaay Nation, Bernice Paipa, Cultural Resource Specialist
- Sycuan Band of the Kumeyaay Nation, Cody Martinez, Chairman
- Torres-Martinez Desert Cahuilla Indians, Mary Belardo, Cultural Committee Vice Chair
- Torres-Martinez Desert Cahuilla Indians, Alesia Reed, Cultural Committee Chairwoman
- Torres-Martinez Desert Cahuilla Indians, Thomas Torte, Chairperson
- Torres-Martinez Desert Cahuilla Indians, Abraham Becerra, Cultural Coordinator
- Torres-Martinez Desert Cahuilla Indians, Gary Resvaloso, TM MLD
- Viejas Band of Kumeyaay Indians, Ernest Pingleton, THPO
- Viejas Band of Kumeyaay Indians, Ray Teran, Resource Management Director

As of the date of this Initial Study, the County received one response, from the Viejas Band of Kumeyaay Indians (Viejas), noting that the project site has cultural significance or ties to Viejas. They further noted that cultural resources have been located within or adjacent to the APE for the Project and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activities. If a Tribe, having a closer proximity to the Project, requests to perform cultural monitoring, Viejas will defer to them. Viejas also requested to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

As discussed under Response to Item V. Cultural Resources, the Project could have potentially significant impacts to archaeological resources, which could be considered a significant resource to a California Native American tribe.

With implementation of Applicant Proposed Measures **APM CUL-1** and **APM CUP-2**, along with mitigation measures **MM CUL-1** and **MM CUL-2**, which include full-time construction monitoring by a Qualified Archaeological Monitor and a traditionally and culturally affiliated Native American Monitor, potential impacts to tribal cultural resources would be less than significant.

**XIX. UTILITIES AND SERVICE SYSTEMS.**

**Would the project:**

- a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the

construction or relocation of which could cause significant environmental effects?

**a) Less Than Significant.** The exploratory wells would not require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

The exploratory wells would not generate wastewater that would need to be treated by a wastewater treatment facility.

Consistent with California Regional Water Quality Control Board, Colorado River Basin Region (CRWQCB) and Imperial County, as appropriate, BMPs for stormwater, stormwater runoff from undisturbed areas around the constructed sites would be directed into ditches and energy dissipaters (if needed) around the proposed well site. Containment basins would be constructed at each proposed well site for the containment and temporary storage of drilling mud and cuttings and stormwater runoff from the construction site. Each containment basin would be approximately 100 feet by 250 feet by 7 feet deep and would hold roughly 420,000 gallons with a 2-foot freeboard. Each containment basin would be lined with a 40-millimeter synthetic liner, in accordance with requirements of the Colorado Regional Water Quality Control Board (CRWQCB). Compliance with California construction stormwater notification and permitting requirements would be performed for each proposed wellsite and new access road. Well pads would be constructed to conduct drainage to the cellar where it will be pumped to a containment basin. All machinery, drilling platforms, and oil and fuel storage would be in areas tributary to the containment basin to prevent the movement of storm water from these areas off the construction site.

A National Pollutant Discharge Elimination System (NPDES) General Permit for Discharge of Construction Related Stormwater and a Stormwater Pollution Prevention Plan (SWPPP) would be required as part of the proposed Project.

No electric power, natural gas, or telecommunications facilities would be required. The development of the containment basins would not cause significant environmental effects, these impacts would be less than significant.

**Would the project:**

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

**b) Less Than Significant.** The wells would be drilled with water- or gel-based drilling mud to circulate the drill cuttings to the surface. This fluid circulates the rock cuttings out of the bore hole and into the surface tanks or a reserve pit, where they are separated from the mud and collected. The mud would then be recirculated. Underbalanced drilling may also be utilized in an effort to minimize water needs and to reduce risk of formation damage from drilling mud. Water required for well pad and access road construction and well drilling would typically average about 50,000 gallons per day for a total of 1.5M gallons of water per well pad during construction. Water necessary for these activities would be purchased from the Coachella Valley Water District via a fire hydrant. Water would be picked up from the source and delivered over existing roads to each construction location or drilling site by a water truck which would be capable of carrying approximately 4,000 gallons per load. This includes the water needed for road grading, construction and dust control. No infrastructure would be required to provide water to the proposed well sites. Water use associated with the exploratory wells would be limited to the construction phase. These impacts would be less than significant.

**Would the project:**

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

**c) Less Than Significant.** As noted in Impact b), the exploratory wells associated with the proposed Project would not generate wastewater that would need to be treated by a wastewater treatment facility. Any onsite wastewater needs will be accommodated by the use of portable toilets that would be removed from the site once construction is complete. There would be no impact.

**Would the project:**

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

**d) Less Than Significant.** Solid wastes generated by the proposed Project would be handled in conformance with all applicable statutes and regulations. The potential for the small amount of waste generated by the Project to exceed the available landfill disposal capacity is negligible.

Small amounts of drilling mud and cuttings would be generated from drilling operations associated with the proposed Project. These wastes would be temporarily stored in the onsite containment basin or tanks. The solid contents remaining in each containment basin, typically consisting of non-hazardous, non-toxic drilling mud and rock cuttings, will be tested as required by the CRWQCB. All solid waste shall be disposed of in approved solid waste disposal sites in accordance with existing County, State and Federal regulations. If allowed, they may be used as daily cover at the nearby landfill. This impact is less than significant.

**Would the project:**

- e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

**e) Less Than Significant.** As noted in Impact d), the exploratory wells associated with the proposed Project would comply with all applicable statutes and regulations related to solid waste. There would be no impact.

**XX. WILDFIRE.**

**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?

**a) No Impact.** The Project area is not located within a State Responsibility Area Fire Hazard Severity Zone, but instead is located in an area designated as Local Responsibility Area-Unincorporated (CalFire 2023). Construction of the

exploratory wells and associated facility would be prohibited from blocking or restricting any emergency access routes. The well site construction would not interfere with emergency response plans or operations near the Project area. No impact would occur.

- 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?

**b) No Impact.** The exploratory wells associated with the proposed Project would not involve development of structures or infrastructure that would introduce new populations to the proposed Project area that could result in impacts involving wildfires. The wildfire risk in this part of Imperial County is considered negligible and low (Fireline 2023). The proposed Project is not considered to be within a Wildland Urban Interface area (University of Wisconsin 2023). The exploratory wells would comply to the goals and policies identified in the County of Imperial General Plan Seismic and Public Safety Element to provide adequate safety measures to protect residents within the proposed Project area. There would be no impact.

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

**c) Less Than Significant.** The proposed Project would require the development of one well pad for each of the six exploratory wells. Each well pad will be approximately 400 feet by 400 feet for a surface area of about 3.77 acres per well pad and 22.02 acres for six wells total. Table 4 above describes the linear feet of new road that would be required for each well pad. Installation of these well pads and associated roads would result in a minor increase in the fire risk during construction due to the potential for sparks from equipment and other heat generating activities igniting vegetation in the surrounding area. The proposed Project is not considered to be within a Wildland Urban Interface area (University of Wisconsin 2023) and wildfire risk in this part of Imperial County is considered to be low and negligible (Fireline 2023). In addition, the proposed Project would not involve development of structures or infrastructure that would introduce new populations to the proposed Project area that could result in impacts involving wildfires. Any impact would be less than significant.

- 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?

**d) No Impact.** As noted throughout this section, the exploratory wells would not involve development of structures or infrastructure that would introduce new populations to the proposed Project area that could result in impacts involving wildfires. The proposed Project area is generally flat, which would minimize any risk from downslope or downstream flooding or landslides. There would be no impact.

*Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; Sundstrom v. County of Mendocino, (1988) 202 Cal.App.3d 296; Leonoff v. Monterey Board of Supervisors, (1990) 222 Cal.App.3d 1337; Eureka Citizens for Responsible Govt. v. City of Eureka (2007) 147 Cal.App. 4th 357; Protect the Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th at 1109; San Franciscans Upholding the Downtown Plan v. City and County of San Francisco (2002) 102 Cal.App.4th 656.*

*Revised 2009- CEQA  
Revised 2011- ICPDS  
Revised 2016 – ICPDS  
Revised 2017 – ICPDS  
Revised 2019 – CEQA*



### SECTION III. MANDATORY FINDINGS OF SIGNIFICANCE.

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The following are Mandatory Findings of Significance in accordance with Section 15065 of the CEQA Guidelines.

- 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?

**a) Less Than Significant With Mitigation Incorporated.** As identified in Section IV of this IS, the proposed Project has 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, and/or reduce the number or restrict the range of a rare or endangered plant or animal. However, the proposed Project would implement **APM-BIO-1, APM BIO-2, APM BIO 4 through APM BIO-9** and **MM-BIO-1 through MM-BIO-10** to reduce any potentially significant impacts to biological resources. Additionally, the proposed Project was determined to result in potentially significant impacts associated with California history or prehistory. Implementation of **MM-CUL-1 through MM-CUL-4** would reduce these impacts to less than significant. Therefore, the proposed Project would result in less than significant impacts with mitigation incorporated.

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

**b) Less Than Significant With Mitigation Incorporated.** Implementation of the proposed Project would not result in a cumulative impact. All potentially significant impacts can be reduced to less than significant via the implementation of the Application Proposed Measures and mitigation measures identified herein. The cumulative impacts associated with the proposed Project are less than significant.

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

**c) Less Than Significant With Mitigation Incorporated.** As noted above, all environmental impacts associated with implementation of the proposed Project can be reduce to less than significant via implementation of the Application Proposed Measures and mitigation measures identified herein. The proposed Project would not result in significant impacts on human beings. This impact is less than significant.

## **A. PERSONS & ORGANIZATIONS CONSULTED/ REFERENCES**

### **PERSONS & ORGANIZATIONS CONSULTED**

#### **County Of Imperial**

- Jim Minnick, Director of Planning & Development Services
- Michael Abraham, AICP, Assistant Director of Planning & Development Services
- David Black, Planner IV
- Derek Newland, Planner III
- Imperial County Air Pollution Control District
- Department of Public Works
- Fire Department
- Agricultural Commissioner
- Environmental Health Services
- Sheriff's Office

#### **Other Agencies/Organizations**

- Native American Heritage Commission (NAHC)
- Agua Caliente Band of Cahuilla Indians
- Barona Group of the Capitan Grande
- Campo Band of Diegueno Mission Indians
- Ewiaapaayp Band of Kumeyaay Indians
- Iipay Nation of Santa Ysabel
- Inaja-Cosmit Band of Indians
- Jamul Indian Village
- Jamul Indian Village
- Kwaaymii Laguna Band of Mission Indians
- La Posta Band of Diegueno Mission Indians
- Manzanita Band of Kumeyaay Nation
- Mesa Grande Band of Diegueno Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- San Pasqual Band of Diegueno Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Sycuan Band of the Kumeyaay Nation
- Torres-Martinez Desert Cahuilla Indians
- Viejas Band of Kumeyaay Indians

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## SECTION VII. FINDINGS

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This is to advise that the County of Imperial, acting as the lead agency, has conducted an Initial Study to determine if the project may have a significant effect on the environment and is proposing the attached environmental document based upon the following findings:

The Initial Study shows that there is no substantial evidence that the project may have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

The Initial Study identifies potentially significant effects but:

- (1) Proposals made or agreed to by the applicant before this proposed Mitigated Negative Declaration was released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur.
- (2) There is no substantial evidence before the agency that the project may have a significant effect on the environment.
- (3) Mitigation measures are required to ensure all potentially significant impacts are reduced to levels of insignificance.

**Based on the environmental analysis, a Mitigated Negative Declaration will be prepared.**

If adopted, the Mitigated Negative Declaration means that an Environmental Impact Report will not be required. Reasons to support this finding are included in the attached Initial Study. The project file and all related documents are available for review at the County of Imperial, Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 (442) 265-1736.

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### NOTICE

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The public is invited to comment on the proposed Mitigated Negative Declaration during the review period.

2-13-2024      Jim Minnick  
Date of Determination      Jim Minnick, Director of Planning & Development Services

*The Applicant hereby acknowledges and accepts the results of the Environmental Evaluation Committee (EEC) and hereby agrees to implement all applicable Mitigation Measures, if applicable as outlined in the MM&RP.*

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

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**A**

**Notice of  
Determination (NOD)  
State Lands  
Commission  
October 20, 2020  
SCH #2019119033**

**EEC ORIGINAL PKG**

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**CALIFORNIA STATE LANDS COMMISSION**  
100 Howe Avenue, Suite 100-South  
Sacramento, CA 95825-8202



*Established in 1938*

JENNIFER LUCCHESI, *Executive Officer*  
(916) 574-1800 Fax (916) 574-1810  
California Relay Service TDD Phone 1-800-735-2929  
from Voice Phone 1-800-735-2922

**Contact Phone: (916) 574-1890**

**NOTICE OF DETERMINATION**  
**(Public Resources Code section 21108)**

File Ref: A2079; A2230

SCH#: 2019119033

Item: 45

Title: Truckhaven Geothermal Exploration Well Project

Proponent: Orni 5, LLC

Location: State Lands Commission, school or lieu land (owned in fee), State Reserved Mineral Interest (RMI) land, and Department of Parks and Recreation fee-owned land; Assessor's Parcel Numbers: 017-340-011, 017-340-018, 017-340-010, 017-340-003, 017-010-048, 017-970-014, 017-340-004, 017-010-016, 017-010-056, 017-010-044, 017-010-045, 017-010-017, 017-010-027, 017-050-013, located in the Truckhaven area, near the Salton Sea in Imperial County.

Description: The Applicant proposes to drill and test up to six geothermal exploration wells (exploratory wells) on private and State lands in the Truckhaven Geothermal Exploration Area, located south-southwest of Salton City in western Imperial County, California. Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. The State Lands Commission action is approval of two geothermal resource leases with 5-year, primary terms through October 31, 2025.

This is to advise that the California State Lands Commission, as  Lead Agency  Responsible Agency, approved the above described project on October 22, 2020, and made the following determinations regarding the project.

- 1) The project  will  will not have a significant effect on the environment.
- 2) A  Mitigated Negative Declaration (MND) was adopted for this project pursuant to the provisions of CEQA.
- 3) Mitigation measures  were  were not made a condition of the approval of the project.
- 4) A mitigation reporting or monitoring plan  was or  was not adopted for this project.
- 5) A Statement of Overriding Considerations  was  was not adopted for the project.
- 6) Findings  were  were not made pursuant to the provisions of CEQA.

The lead agency for the project, Imperial County, adopted the Mitigated Negative Declaration (MND) and Mitigation Monitoring Program and approved the project on December 11, 2019. The California State Lands Commission has considered the MND as prepared for this project by Imperial County. At this time, the Commission's offices are closed to the public due to public health and safety concerns regarding the Novel Coronavirus (COVID-19). Please contact Commission staff for the most up-to-date information on the availability of the MND and the record of project approval.

**DATE RECEIVED FOR FILING AND POSTING BY THE  
GOVERNOR'S OFFICE OF PLANNING AND RESEARCH**

ERIC GILLIES, Acting Chief  
Environmental Planning and Management Division

Contact Person: Cynthia Herzog (916) 574-1900

**EEC ORIGINAL PKG**

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**B**

**Notice of  
Determination (NOD)  
State Parks Dept.  
January 25, 2021  
SCH #2019119033**

**EEC ORIGINAL PKG**

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## NOTICE OF DETERMINATION

**TO:** State Clearinghouse  
Office of Planning and Research  
1400 Tenth Street, Room 222  
P.O. Box 3044  
Sacramento, California 95812-3044

**FROM:** Department of Parks and Recreation  
1416 Ninth Street  
P.O. Box 942896  
Sacramento, California 94296-0001

**SUBJECT:** Filing of the Notice of Determination in compliance with Section 21108 of the Public Resources Code.

**STATE CLEARINGHOUSE NUMBER:** 2019119033

**PROJECT TITLE:** Truckhaven Geothermal Seismic Study Right of Entry Permit

**CONTACT PERSON:** Sara Lockett  
5172 Highway 78  
Borrego Springs, CA 92004

**EMAIL:** sara.lockett@parks.ca.gov

**PROJECT LOCATION:** Ocotillo Wells State Vehicular Recreation Area, Imperial County

### PROJECT DESCRIPTION:

Orni-5, LLC. has requested a Right of Entry permit from California State Parks, Ocotillo Wells State Vehicular Recreation Area (OWSVRA) for the purposes of a seismic study to support proposed geothermal exploration, as defined in the County of Imperial's Mitigated Negative Declaration (SCH #2019119033). The Project would occur over a 23.5 square mile area near Salton City, CA and approximately 20% of the project area is owned by California State Parks. During the seismic study, specialized vehicles would drive throughout the project area, stopping at designated points to generate source vibrations that would be captured by receiving stations. The data will be used to refine the placement of geothermal exploration wells to maximize potential resources. The Right of Entry permit would only apply to lands owned by California State Parks and would grant approval for vehicular access to requested routes of travel (both designated and undesignated) throughout the SVRA. No exploratory wells would be approved with this permit.

**This is to advise that the California Department of Parks and Recreation has approved the above project on January 25, 2021, and has made the following determinations regarding the above described project:**

- The project will not have a significant effect on the environment.  
 The project will have a significant effect on the environment.
- An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.  
 A Negative Declaration was prepared for this project, pursuant to the provisions of CEQA.
- Mitigation measures  were  were not made a condition of the approval of the project.
- A Mitigation reporting or monitoring plan  was  was not adopted for this project.
- A Statement of Overriding Considerations  was  was not adopted for this project.
- Findings  were  were not made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the Negative Declaration, is available to the General Public at the California Department of Parks and Recreation, Ocotillo Wells District located at 5172 Highway 78, Borrego Springs, CA 92004. An

electronic version of this document can be viewed at [ceqanet.opr.ca.gov](http://ceqanet.opr.ca.gov) using State Clearinghouse Number 2019119033 as a reference.



---

Steve Quartieri  
District Superintendent I  
Ocotillo Wells District

1/25/2021

---

Date



**C**

**Jurisdictional  
Delineation**

**Well#18-32 & Well #47-32**

**JURISDICTIONAL DELINEATION REPORT  
FOR THE TRUCKHAVEN GEOTHERMAL  
EXPLORATION WELL PROJECT  
SALTON CITY, IMPERIAL COUNTY,  
CALIFORNIA**

***Prepared for:***

**ORNI 5  
6225 Neil Road  
Reno, NV 89511**

***Prepared by:***

**CHAMBERS GROUP, INC.  
5 Hutton Centre Drive, Suite 750  
Santa Ana, CA 92707  
Santa Ana, California 92707  
(949) 261-5414**

**November 2022**

**EEC ORIGINAL PKG**

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*Jurisdictional Delineation Report  
for the Truckhaven Geothermal Exploration Well Project  
Salton City, Imperial County, California*

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**ACRONYMS AND ABBREVIATIONS**

<b>AJD</b>	Approved Jurisdictional Determination
<b>BTB</b>	bank to bank
<b>CDFW</b>	California Department of Fish and Wildlife
<b>CWA</b>	Clean Water Act
<b>EPA</b>	Environmental Protection Agency
<b>FAC</b>	facultative
<b>FACW</b>	facultative wetland
<b>FACU</b>	facultative upland
<b>FEMA</b>	Federal Emergency Management Agency
<b>ft.</b>	feet
<b>HUC</b>	hydrologic unit code
<b>GIS</b>	Geographic Information System
<b>NAIP</b>	National Agriculture Imagery Program
<b>NHD</b>	National Hydrography Dataset
<b>NI</b>	no indicator
<b>NRCS</b>	Natural Resources Conservation Service
<b>NWI</b>	National Wetlands Inventory
<b>OBL</b>	obligate
<b>OHV</b>	off-highway vehicle
<b>OHWM</b>	ordinary high water mark
<b>RA</b>	review area
<b>RWQCB</b>	Regional Water Quality Control Board
<b>TNW</b>	traditionally navigable waters
<b>UPL</b>	obligate upland
<b>USDA</b>	United States Department of Agriculture
<b>USACE</b>	United States Army Corps of Engineers
<b>USFWS</b>	United States Fish and Wildlife Service
<b>USGS</b>	United States Geological Survey
<b>WOUS</b>	Waters of the United States

## **SECTION 1.0 – INTRODUCTION**

Chambers Group, Inc. (Chambers Group) prepared this report of findings of an aquatic resources inventory survey of two proposed well sites and associated access roads for the Truckhaven Geothermal Exploration Well Project located near Salton City in Imperial County, California. This report was prepared for the delineation of the extent of any jurisdictional wetland and/or non-wetland Waters of the United States or State that may be subject to the United States Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW).

### **1.1 PROJECT BACKGROUND**

The whole of the exploration effort includes up to six geothermal exploration wells that are located on private and State lands, and up to four geothermal exploration wells are on public land managed by the Bureau of Land Management (BLM), in the Truckhaven Geothermal Exploration Area. The well sites were selected based on past geologic investigations going back to the 1980's, including geologic mapping, geophysical surveys, and temperature gradient holes. Additionally, Phillips Petroleum drilled an exploration well in 1981 in the Project vicinity and Iceland America Energy drilled a full-size exploration well in 2007 about a mile west of the Project. Although ORNI 5 has selected ten geothermal exploration well targets as best as possible at the present time, as with all geothermal exploration, geothermal reservoir targets are often refined (and geothermal exploration wells relocated) as more data are collected and analyzed.

The well sites are located in the "Truckhaven Geothermal Leasing Area" analyzed by the BLM in the "Final Environmental Impact Statement (EIS) for the Truckhaven Geothermal Leasing Area" (October 2007). The same area is analyzed in the Geothermal Overlay Zone for Imperial County's "Final Programmatic Environmental Impact Report - Renewable Energy and Transmission Element Update" (July 2015). Additionally, Westec Services, Inc. prepared an Environmental Impact Report (EIR) for Imperial County in 1981 on Phillips Petroleum's "Truckhaven Prospect Geothermal Exploration Wells."

### **1.2 PROJECT OBJECTIVES**

The purpose of the Proposed Action is to provide ORNI 5 the opportunity for exploratory geothermal well drilling within the Truckhaven Geothermal Leasing Area to drill and flow test the anticipated underlying geothermal reservoir. The Project will drill, complete, test and monitor these geothermal resource wells. The geothermal wells are designed to drill into, and flow test the anticipated underlying geothermal reservoir to confirm the characteristics of the geothermal reservoir and determine if the geothermal resource is commercially viable. The Proposed Action is consistent with the National Energy Policy, which encourages the development of energy resources including geothermal resources on federally managed lands. Executive Order 13212, Actions to Expedite Energy-Related Projects, issued on May 18, 2001, states, "[T]he increased production and transmission of energy in a safe and environmentally sound manner is essential."

### **1.3 PROJECT LOCATION**

The Project is situated in the Truckhaven Geothermal Exploration Area, located south southwest of Salton City between Ocotillo Wells and the Salton Sea in unincorporated Imperial County, California (Figure 1). The proposed wells are located in an area west of State Highway 86 (SR86) and generally north of County Dump Road.

#### **1.4 SURVEY AREA**

The areas surveyed included the impact area of two proposed well sites (sites 18-32, and 47-32) and the approximately 20-foot-wide associated access routes (Impact Area), plus a 50-foot buffer (Survey Area). The approximately 8.1-acre Impact Area occurs in Township 10 South, Section 32, Range 10 East, within the United States Geological Survey (USGS) *Truckhaven* and *Kane Spring NW 7.5-Minute* Quadrangles, California (see Figure 2; USGS 1992). The well sites are approximately 3.67 acres each. The proposed access routes equal a combined length of approximately 1,652 ft.

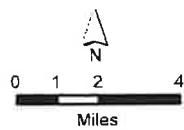
The Survey Area was determined based on a Biological Resources Evaluation Report prepared by POWER Engineers (Power) that covers the entire Proposed Action area (Power 2018). That report combines the results of 2016 and 2018 biological resources surveys conducted within the Proposed Action Area. Of the Proposed Action Area, the report identified that the proposed well sites 18-32 and 47-32 would require access roads that are located within a 100-year FEMA floodplain and therefore could be considered to be jurisdictional waters of the United States or State. As such, the areas surveyed included these two proposed well locations and associated access roads which occur within the 100-year floodplain.





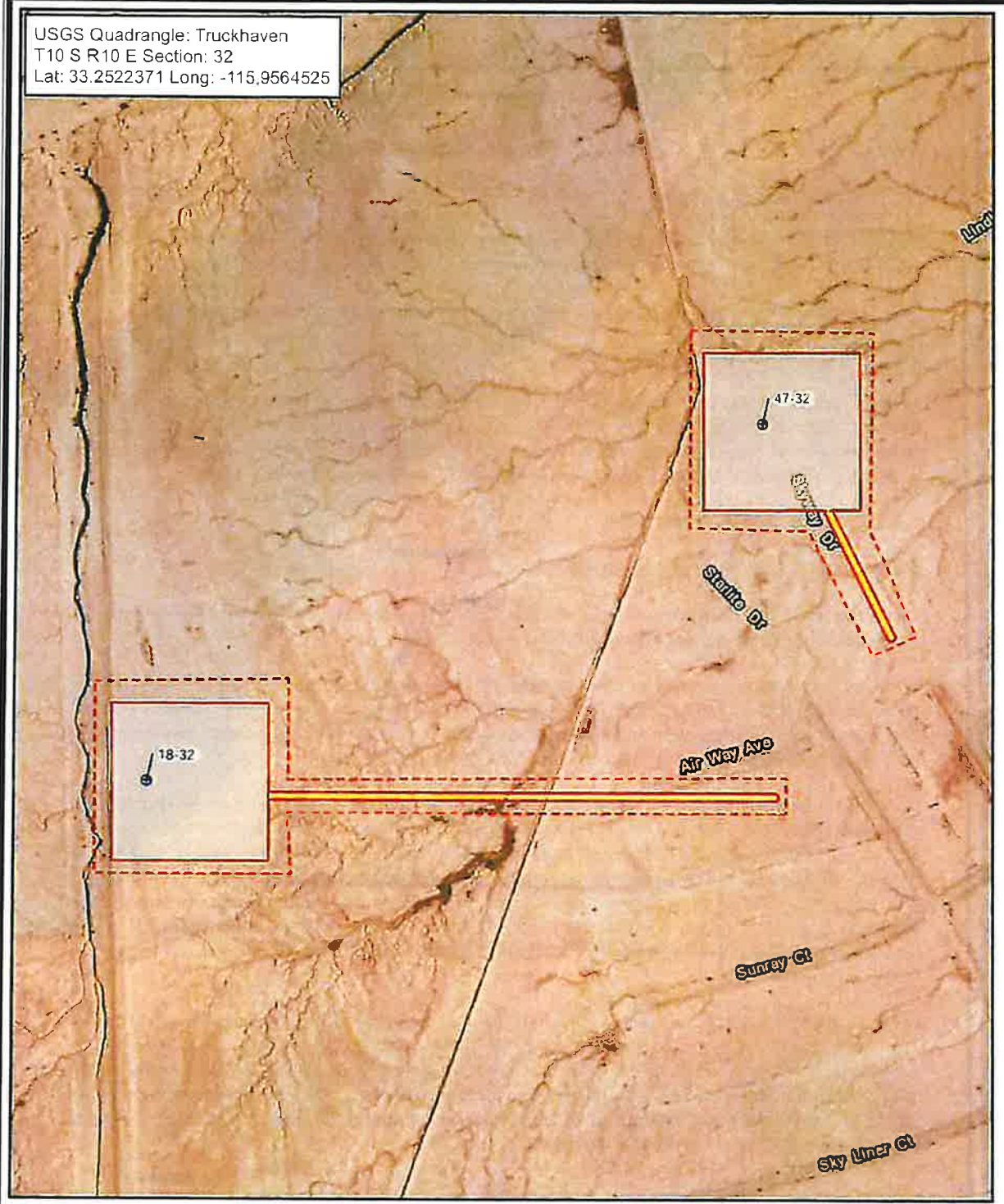
★ Survey Area

**Figure 1**  
 Truckhaven Geothermal Exploration Wells Project  
 Project Site Regional Vicinity



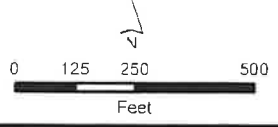
US Naval  
 Name: 24133\_00\_Fg\_1\_P0005\_Site\_Regional\_Vicinity.kml  
 Print Date: 10/12/12 11:17 AM Author: jgarcia

USGS Quadrangle: Truckhaven  
T10 S R10 E Section: 32  
Lat: 33.2522371 Long: -115.9564525



-  Survey Area
-  Impact Area
-  Well Pads
-  Well Sites
-  Access Road

Figure 2  
Truckhaven Geothermal Exploration Well Project  
Survey Area Location



## **SECTION 2.0 – PROPOSED PROJECT**

### **2.1 OVERVIEW**

ORNI 5 proposes to drill and test up to six geothermal exploration wells on private and State lands, and up to four geothermal exploration wells on public land managed by the BLM, in the Truckhaven Geothermal Exploration Area. Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to ORNI 5.

ORNI 5 proposes to commence Project operations when all required permits are acquired.

### **2.2 EXISTING AND PLANNED SITE ACCESS**

Primary highway access to the Project is off State Highway 86 to Airpark Drive or County Dump Road. Existing access roads will be utilized to the extent practical. The access roads will be constructed or improved with gravel and/or maintained as needed to safely accommodate the traffic required for the exploration well drilling activities. Roadbeds will typically be approximately 20 ft. across.

### **2.3 CONSTRUCTION METHOD**

#### **2.3.1 Well Pad Layout and Construction**

One well pad will be constructed for each drill site. Each exploration well pad will be approximately 400 ft. by 400 ft. (for a total surface area of about 3.7 acres).

Well pad preparation activities will include clearing, earthwork, drainage, and other improvements necessary for efficient and safe operation. Cut and fill were minimized in the site selection process. Measures to prevent soil erosion and loss of topsoil would include the preparation of an erosion control plan before grading to adequately control erosion during construction.

Each site will be prepared to create a level pad for the drill rig, and a graded gravel (if needed) surface for the support equipment. Runoff from undisturbed areas around the constructed sites will be directed into ditches and energy dissipaters (if needed) around the site, consistent with California RWQCB, Colorado River Basin Region (CRWQCB), and Imperial County or BLM, as appropriate, best management practices for storm water. All machinery, drilling platforms, and oil and fuel storage will be in areas tributary to the containment basin in order to prevent the movement of storm water from these areas off of the constructed site. The site will be graded to direct runoff from the pad into the cellar which will be pumped to the containment basin.

Containment basins will be constructed at each site for the containment and temporary storage of drilling mud and cuttings and storm water runoff from the constructed site. Each containment basin will be approximately 100 ft. by 250 ft. by 7 ft. deep and will hold roughly 420,000 gallons with a 2-foot freeboard. Each containment basin will be lined with a 40-mil synthetic liner, in accordance with requirements of the CRWQCB. Compliance with California construction storm water notification and permitting requirements will be performed for each well pad and new access road.

### **2.3.2 Well Drilling**

Proposed activities include the drilling (and re drilling, if necessary) of up to 10 geothermal resource exploration wells, each to a total depth of approximately 5,000 to 7,000 ft. (into the geothermal zone) from one of the constructed well drilling pads.

Geothermal well drilling would be conducted from the constructed well pads described above. Drilling operations would take place for 24 hours per day, 7 days per week. Each geothermal well would take approximately 30 - 45 days to complete. The drilling operation will employ about 25 people in 6-person shifts. Well pad construction and drilling would generate a small number of daily one-way vehicle trips (as many as 40 or more trucks and 12 - 16 small trucks/service vehicles/worker vehicles).

Standard geothermal well drilling equipment would be used, and well drilling operations conducted for the Project. The wells would be drilled using a large rotary drilling rig whose diesel engines are permitted under the California Air Resources Board (CARB) Portable Equipment Registration Program (PERP). The wells would be drilled with water- or gel-based drilling mud to circulate the drill cuttings to the surface. During drilling, the top of the drill rig derrick would be as much as 175 ft. above the ground surface (including non-LED aircraft safety lighting), and the rig floor could be 20 to 30 ft. above the ground surface. The typical drill rig and associated support equipment (rig floor and pipe stands; draw works; derrick; drill pipe; trailers; drilling mud, fuel, and water tanks; diesel generators; air compressors; etc.) would be brought to the prepared well pad on approximately 40 or more large tractor trailer trucks. The placement of this equipment on each prepared well pad would depend on rig specific requirements and site-specific conditions.

Each geothermal well will also be drilled and cased to the design depth of approximately 5,000 to 7,000 ft., or the depth selected by the Project geologist. A geothermal well drilling and completion program for each well will be submitted to California Department of Oil, Gas and Geothermal Resources (CDOGGR) or BLM, as appropriate. Blowout prevention equipment (BOPE) inspected and approved by CDOGGR or BLM, as appropriate, will be utilized while drilling below the surface casing. Well casing (typically 20") will be cemented to a depth of approximately 1,800 ft. below Kelly bushing (bkb). A slotted liner (typically 9 5/8") will be hung from  $\pm 1,750$  ft. to near total depth. All these numbers are subject to change and will be finalized when the drilling programs are submitted to CDOGGR or BLM, as appropriate.

The well bore would be drilled using non-toxic, temperature stable gel-based drilling mud or gel and polymer drilling fluid to circulate the rock cuttings to the surface where they are removed from the drilling mud. The mud is then recirculated. Rock cuttings would be captured in the containment basin. Additives would be added to the drilling mud as needed to prevent corrosion, increase mud weight, and prevent mud loss. The inside diameter of the wells would be approximately 30 inches at the top and would telescope with depth. The typical design depth of both the production and injection wells is projected to be about 5,000 to 7,000 ft. Each geothermal well would be drilled and cased to the design depth or the depth selected by the project geologist. The final determination of well depth and well completion would be based on geological and reservoir information obtained as wells are drilled.

### **2.3.3 Drill Pad and Access Road Aggregate**

Aggregate required for well pad and access road construction will likely be purchased from the Aggregate Products Inc. Salton Sea quarry facility, located approximately two miles west of the town of Salton Sea Beach and ten miles north northwest of the Project.

#### **2.3.4 Water Requirements and Sources**

Water required for well pad and access road construction and well drilling will typically average about 50,000 gallons per day. Water necessary for these activities will be purchased from the Coachella Water District via a fire hydrant. Water will be picked up from the source and delivered over existing roads to each construction location or drilling site by a water truck which will be capable of carrying approximately 4,000 gallons per load. This includes the water needed for road grading, construction, and dust control.

#### **2.3.5 Well Testing**

Wells would be initially flow tested while the drill rig is still over the well. The residual drilling mud and cuttings would be flowed from the well bore and discharged into the drilling sump. This cleanup flow test may be followed by one or more short term flow tests, each lasting from several hours to a day and also conducted while the drill rig is over the well. These tests typically consist of producing the geothermal well into portable steel tanks brought onto the well site while monitoring geothermal fluid temperatures, pressures, flow rates, chemistry, and other parameters. Steam and non-condensable gasses from the geothermal fluid would be discharged to the atmosphere. Produced fluid from the short-term flow test would be pumped back into the well.

An injectivity test could also be conducted by injecting the produced geothermal fluid from the steel tanks back into the well and the geothermal reservoir. The drill rig would likely be moved from the well site following completion of these short-term test(s). Following the short-term test(s), all equipment would be removed and the well shut in. Temperature profiles of the wellbore would be measured during the shut-in period.

After the rig has moved, a longer-term test could be conducted using a test facility consisting of approximately ten, 21,000-gallon steel tanks, injection pumps, coil tubing, nitrogen pumps, filtration units, flow meters, recorders, and sampling apparatus. This test could last for 30 days. Steam and non-condensable gasses from the geothermal fluid would typically be discharged to the atmosphere. The remaining geothermal fluid would be injected back into either the well from which it was produced or into a second well via temporary pipeline routed above ground along the well site access roads or, if following access roads is not feasible, along other previously disturbed routes.

#### **2.3.6 Geothermal Well Monitoring**

Following completion of the short term geothermal well testing, all of the drilling and testing equipment will be removed from the site. The surface facilities remaining on the site will typically consist of several valves on top of the surface casing, which will be chained and locked and surrounded by an approximately 12-foot by 12-foot by 6-foot-high fence to prevent unauthorized access and vandalism. Pressure and temperature sensors may be installed in the hole at fixed depths to monitor any changes in these parameters over time. A temperature profile of the well may also be run. This monitoring may be continued indefinitely.

#### **2.3.7 Abandonment Program**

After drilling operations are completed on each well, the liquids from the containment basin will either be evaporated, pumped back down the well, and/or disposed of in accordance with the requirements of the CRWQCB and BLM or Imperial County Public Health Department, as applicable.

The solid contents remaining in each containment basin, typically consisting of non-hazardous, non-toxic drilling mud and rock cuttings, will be tested as required by the CRWQCB or BLM, as applicable. The solids will be removed and disposed of in a waste disposal facility authorized by the CRWQCB to receive and dispose of these materials. If allowed, they may be used as daily cover at the nearby landfill. After the materials in the containment basins have been removed the containment basin area may be reclaimed depending on if there may be a need for its use in the future.

Upon the completion of well drilling and flow testing, a decision will be made by ORNI 5 regarding the commercial potential of each well. If a well is judged by ORNI 5 to have any commercial potential, well operations will likely be suspended pending application for and receipt of regulatory approvals to place the well into commercial service through a new pipeline to a new geothermal power plant or direct use facility. The well will likely continue to be monitored while these approvals are being processed. If a well is judged to not have commercial potential, it may continue to be monitored, or it may be abandoned in conformance with the well abandonment requirements of the CDOGGR or BLM, as applicable. Abandonment of a geothermal well involves plugging the well bore with clean drilling mud and cement sufficient to ensure that fluids will not move across into different aquifers. The well head (and any other equipment) will be removed, and the casing cut off at least six ft. below ground surface.

Following abandonment of the well, the well site itself would be reclaimed, typically by re grading the entire well pad and access road area to approximately the same topography as existed prior to construction of the site, including the spreading the topsoil (if any) over the surface. Revegetation would be in conformance with the requirements of the surface managing agency.

### **SECTION 3.0 – REGULATORY OVERVIEW**

The limits of jurisdictional waters regulated by the USACE, RWQCB, and CDFW were delineated for the Survey Area. Pursuant to Section 404 of the Clean Water Act (CWA), USACE regulates the discharge of dredged and/or fill material into waters of the United States. The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act (California Water Code, Division 7, §13000 et seq.). Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife.

Current USACE delineation procedures and guidance were used to identify and delineate any wetlands and/or waters of the United States potentially subject to USACE (USACE 1987, 2007, 2008a, 2008b) and RWQCB jurisdiction pursuant to Sections 404 and 401 of the CWA, respectively. For purposes of USACE jurisdiction, this delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and applicable regional supplement(s). The regional supplement used included 2008 Arid West Regional Delineation Supplement (USACE 2008a). This delineation utilized the ordinary high water mark (OHWM) field guide (USACE 2008b). The definition of waters of the United States is consistent with the pre-2015 regulatory regime (Environmental Protection Agency [EPA] and USACE 2021).

Likewise, current CDFW procedures and guidance were used to identify and delineate any streambeds, rivers, or associated riparian habitat potentially subject to CDFW jurisdiction, pursuant to Section 1600 et seq. of the California Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (Vyverberg 2010).

Additional discussion of the regulatory framework is provided in Appendix A.

## **SECTION 4.0 – METHODS**

### **4.1 LITERATURE REVIEW**

Prior to the field delineation, online United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps (USFWS 2022) and USGS National Hydrography Dataset (NHD) maps (USGS 2022) were examined to determine the potential areas of the Survey Area that may contain waters subject to USACE, RWQCB, and CDFW jurisdiction in the Survey Area. Data from these maps were digitally superimposed over the Survey Area on current and historical aerial photographs (USGS 2021 and Google 2022) and USGS topographic quadrangle maps (USGS 1992) to identify potential water features and drainage patterns with potential hydrologic connectivity (nexus) between the Survey Area and traditionally navigable waters (TNW; Figure 3); potential waters and drainages with hydrological connectivity were investigated in the field.

The USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2022) was also reviewed for soil types found within the Project footprint area; however, soil data for the Survey Area was not available.

### **4.2 FIELD SURVEY**

A field delineation of waters was conducted by walking transects within the Survey Area and collecting data on water features (e.g., drainages, water bodies, wetland habitats, and/or potential wetlands). Potential USACE/RWQCB/CDFW jurisdictional areas, including those identified during the literature search as well as others observed in the field, were evaluated for the presence of definable channels, soils, wetland vegetation, riparian habitat, hydrology, and connectivity. The existing width of the water feature (e.g., OHWM or bank to bank [BTB]) crossed by the Project was measured (linear ft.) in the field perpendicular to the drainage path. In the absence of a defined wetland, the presence of a bed and bank or the upper limit of the OHWM, if applicable, was recorded. Drainage substrate and vegetation (if any) within and immediately adjacent to each water feature was noted, which provided information to assess the presence or absence of wetland characteristics, including hydrophytic vegetation, hydrology, and hydric soils.

The boundaries of each water feature were collected and digitized utilizing GIS technology and software to create a shapefile that can be reviewed by respective Agencies' jurisdiction, based on current Agency guidance documents.

#### **4.2.1 Hydrology**

Typical hydrologic indicators that were observed per the 1987 Wetland Manual and 2008 Arid West Supplement guidelines were recorded.

Climate and flow frequency was considered when observing watermarks and drift lines. For the purpose of determining hydrologic connectivity to a TNW, aerial photos, NWI maps, and USGS quadrangle maps were reviewed; and all features were inspected in the field on- and offsite for true connectivity.



#### 4.2.2 Vegetation

If wetland plants are identified, they were categorized according to their probabilities to occur in wetlands versus non-wetlands in accordance with the categories in the *National List of Species that Occur in Wetlands* (Reed 1988). More specifically, the California Land Resource Region (Region 0) wetlands plant list is used, which is a regional adaptation of the *National List*. The wetland species categories are:

- I. **Obligate Wetland (OBL)** – Occur almost always (estimated probability >99 %) under natural conditions in wetlands.
- II. **Facultative Wetland (FACW)** – Usually occur in wetlands (estimated probability 67 % to 99 %), but occasionally found in non-wetlands.
- III. **Facultative (FAC)** – Equally likely to occur in wetlands or non-wetlands (estimated probability 34 % to 66 %).
- IV. **Facultative Upland (FACU)** – Usually occur in non-wetlands (estimated probability 67 % to 99 %), but occasionally found in wetlands.
- V. **Obligate Upland (OBL UPL)** – May occur in wetlands in another region but occur almost always (estimated probability >99 %) under natural conditions in non-wetlands in southern California. All species not listed on the *National List of Species that Occur in Wetlands* (Reed 1988) are considered to be UPL.
- VI. **No Indicator (NI)** – NI is recorded for those species for which insufficient information was available to determine an indicator status.

Plant species and absolute percent covers will be recorded by stratum (i.e., tree, sapling/shrub, herb, woody vine) and evaluated for dominance and prevalence according to guidelines in the 1987 Wetland Manual and 2008 Arid West Supplement. Naming conventions follow the Jepson Manual (Baldwin et al. 2012).

#### 4.2.3 Soils

Soil pits were dug in representative delineated features in the Survey Area if they were mapped by the NWI/NHD as historic wetlands and/or if they exhibited hydric characteristics. Soils were evaluated according to guidelines in the 1987 Wetland Manual and 2008 Arid West Supplement. Soil layers were examined for the presence or absence of hydric soil indicators and oxidation/reduction features indicative of historic saturated soil conditions. If hydric soils were found, soil pit locations were chosen to identify the approximate boundary of non-hydric and hydric soils. To accomplish this, one soil pit was dug within apparent hydric soils and one soil pit was dug within anticipated non-hydric soils. In addition, soil test pits were dug in areas where the hydric nature of the soil was uncertain but expected, in order to confirm the presence or absence of hydric soils.

## SECTION 5.0 – RESULTS

The following sections provide context and background by describing soils, vegetation, and hydrological features within the Survey Area. Chambers Group staff Erik Olmos and Laurie Gorman performed field investigations on April 26 and 27, 2022, to delineate potential waters onsite, including wetlands. The results of the field delineation are presented below.

### 5.1 CLIMATE

The Project is set in an arid climate and receives an average of three inches of rain per year. The wet season spans from late November to the end of March. The Project site is currently under severe drought conditions (Riganti 2022). Temperatures typically range from 77 to 106 degrees Fahrenheit (°F) in the summer, and from 43 to 69°F in the winter. The Project site typically has a period of high winds from March through July, during which hourly wind speeds average over 7.8 miles per hour (mph) (Cedar Lake Ventures, Inc. 2022). The Survey Area does not show evidence of human use with the exception of some off-highway vehicle (OHV) tracks and dirt roads.

### 5.2 HYDROLOGY AND HYDROLOGIC CONNECTIVITY

The Project is located within the Arroyo Salada and Tule Wash-Frontal Salton Sea Subwatersheds (HUC 12) of the West Salton Sea groundwater basin (USDA 2022) in Imperial County, California (Figure 4). These subwatersheds are bound by mountains of the Santa Rosa Mountains Wilderness to the north and the Anza-Borrego Desert State Park to the south; and by the Salton Sea to the east (Google 2022). Arroyo Salada and Tule Wash are the major water sources for the Arroyo Salada and Tule Wash-Frontal Salton Sea Subwatersheds. Based on topography and connectivity of the surrounding area visible on aerial maps (Goggle 2022), water is received from rain events in the southern Santa Rosa Mountains Wilderness, flowing southeastwardly through alluvial braided channels and ephemeral drainages including the Arroyo Salada and Tule Wash, eastwardly through the valley east of the Borrego Badlands, through the Survey Area and into the Salton Sea approximately 4 miles east of the Project. Ephemeral water features within the Survey Area flow into Arroyo Salada, Surprise Wash, and Tule Wash. Hydrological indicators in the field included break in the bank slope, mudcracks, knickpoints, ripples, soil development, change in sediment particle size distribution, and surface relief.

Figure 5 provides the groundwater basins containing the Survey Area (i.e., West Salton Sea). Figure 6 provides the location of the flood zones identified by FEMA. The proposed well pads are situated outside of any Special Flood Hazard Area (SFHA). A portion of the proposed access roads for the well pads contain SFHAs designated as Zone AE (areas that have a 1 percent annual chance of flooding), and shaded Zone X (areas having a 0.2 annual chance of flooding).

### 5.3 VEGETATION COMMUNITIES

Two vegetation communities occur within the Survey Area and are described below. In addition, a few tamarisk (*Tamarix ramosissima*) individuals were present within two locations where an ephemeral drainage crosses the Survey Area; these individuals were isolated and did not function as a vegetation community.

### 5.3.1 Sonoran Creosote Scrub

Sonoran creosote bush scrub is a widely spaced open community generally dominated by creosote (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*), usually with abundant bare ground between larger shrubs. Growth in this community occurs from winter to early spring and later, with sufficient rainfall, with the shrubs often dormant for long periods. During years of sufficient rainfall, the bare ground is filled with ephemeral herbs. This community typically occurs on well-drained secondary soils of slopes, fans, and valley, rather than upland sites, with winter temperatures seldom below freezing (Holland 1986).

Sonoran creosote bush scrub was noted to be very sparse throughout the Survey Area. This community appeared to be essentially bare of vegetation, but remnant components of the community were present in sufficient number to classify the vegetation type. This community was found primarily in the active floodplain and on the banks of delineated water features.

### 5.3.2 Bare Ground

Bare ground areas are devoid of vegetation due to natural causes, soil compaction from human disturbance, or development of roads or other infrastructure.

The majority of the Survey Area consisted of bare ground.

## 5.4 SOILS

No USDA soil data was available online for the Survey Area as of the time of preparation of this report (USDA 2022). Soils present within the Survey Area were poorly developed with variable levels of erodibility and permeability, as is characteristic of dryland watersheds (CDFW 2010). In general, topography of the Survey Area gradually slopes west to east in the direction of the Salton Sea. Elevation within the Survey Area ranges from approximately -101 ft. above mean sea level (amsl) on the western end to -124 ft. amsl on the eastern end. Microtopography of the landscape within the Survey Area was variable, as the soil has been highly eroded over time by wind and sheet flow during heavy rain. No hydric soils were found within the Survey Area, and there are no documented historic wetlands within the Survey Area (USFWS 2022).

## 5.5 WETLANDS

No wetland features (e.g., wetland plants, hydric soils) were identified within the Survey Area. Because this region only receives approximately 3 inches of rain a year, the washes identified within the Survey Area are most often dry and do not support distinct riparian/wetland vegetation.

## 5.6 OTHER WATERS

Based on the NWI and/or NHD historic database search, several drainages have been documented in the vicinity of the Survey Area, including one stream/river that has been documented within the Impact Area of the proposed access roads for both well pads, one canal/ditch drainage feature that has been documented just west of the proposed well pad 18-32 Impact Area, and one stream/river that connects into these two features (Figure 3). The field delineation confirmed the presence of these three drainages (Drainages 1, 2, and 4, respectively), and revealed the presence of one additional man-made ephemeral ditch (Drainage 3) that was not documented by the NWI or NHD.

A total of 1,347 linear ft. of drainages were mapped within the Survey Area, including 424 linear ft. within the Impact Area. Drainage features present within the Survey Area are analyzed in this report as Review Areas (RAs) and are displayed in Figure 7. All drainages present within the Survey Area are ephemeral. Drainage 4 feeds into Drainages 1 and 2 southwest of the Survey Area. Drainage 1 connects to an NWI mapped flowline that feeds into Surprise Wash, which in turn connects to Tule Wash, and then continues east and feeds into the Salton Sea. Drainages 2 and 3 connect to Arroyo Salada to the north, which in turn feeds into the Salton Sea to the east. Therefore, ephemeral drainages in the Survey Area directly contribute to the Salton Sea, a TNW, and may be subject to USACE, CDFW, and RWQCB jurisdiction. Several tributaries to the drainages were mapped during the field investigation. These drainages are described below, and data recorded for the drainages specifically within the Impact Area is presented in Table 1. Completed OHWM forms representative of the water features identified are provided in Appendix B. Reference photographs were taken during this survey and are included as Appendix C.

As stated above, wind and sheet flow during heavy rain have formed erosional features through the highly erosive soil over time; these features total 1,368 linear ft. within the Survey Area, including 1,097 linear ft. within the Impact Area (Figure 7). Water features that do not have a defined streambed or stream bank are mapped as "swale" and total 476 linear ft. within the Survey Area, including 129 linear ft. within the Impact Area.

#### **5.6.1 Drainage 1: NWI/NHD Mapped Drainage**

This ephemeral drainage was documented by the NWI and NHD to flow in a northeast direction beginning southwest of the Survey Area, crossing the proposed well access roads in two locations before connecting to Surprise Wash northeast of the Survey Area. The field investigation confirmed that the drainage crosses one of these two proposed well access road locations, along with two proposed well pads. Drainage 1 is ephemeral and was dry at the time of the survey. The flow path described below is based on other field indicators.

Drainage 1 originates west of the Survey Area and flows northeast as it facilitates water from the Santa Rosa Mountains towards the Salton Sea. Before entering the Survey Area, Drainage 1 is partially diverted by Drainage 2 just southwest of proposed well pad 18-32. As a result, a portion of the water flows north along the ditch towards Arroyo Salada, through the Survey Area west of proposed well pad 18-32 (RA 2), while the rest of the water flows sub-surface, combining with water from Drainage 4, in its NWI-mapped path northeast. Drainage 1 then percolates back to the surface with a defined bed and bank and enters the Survey Area through the proposed access road for well pad 18-32 (RA 1E). Here, Drainage 1 receives water from a tributary that originates in the proposed access well pad 18-32 (RA 1D). Drainage 3 also passes through the proposed access road for well pad 18-32 (RA 3A), and diverts Drainage 1 in a sharp angle north/northeast along the man-made berm, away from the NWI-mapped pathway and bypassing the access road for proposed well pad 47-32. Water continues along Drainage 3 and passes through the Survey Area west of proposed well pad 47-32 (RA 3B). A portion of the water continues along Drainage 3 and feeds into Arroyo Salada to the north, while the remainder turns southeast and crosses into proposed well pad 47-32 (RA 1F). Drainage 1 then continues east and connects to the NWI/NHD-mapped drainage path, flows under the highway, and connects to Surprise Wash. The man-made ditches (Drainages 2 and 3, as described in greater detail below) have altered the hydrology of the area by diverting the path of Drainage 1 and Surprise Wash northeast, away from the Salton Sea Airport and a housing tract. This diverted path represents a "new normal" for the flow Drainage 1. Saturation resulting from this new hydrological pattern is visible on aerial photography. The location where Drainage 1 historically crossed

the proposed access road for well pad 47-32 is no longer part of the typical flow pattern, no longer has a definable bed and bank, and is mapped as a swale feature in Figure 3.

Drainage 1 had mostly defined cut banks with a single flow channel within the banks. The combined length of Drainage 1 within the Survey Area is 1,102 linear ft. (402 linear ft. within the impact area). The OHWM width of Drainage 1 ranges from approximately 4 to 25 ft. and averages approximately 11.3 ft. The bank-to-bank width ranges from approximately 15 to 60 ft. and averages approximately 30 ft. Sinuosity of the drainage system is moderate. Hydrological indicators within the active floodplain include a break in the bank slope, mudcracks, knickpoints, soil development, change in sediment particle size distribution, and surface relief. The active floodplain and banks of Drainage 1 contain sparse Sonoran creosote scrub, scattered annuals, and non-native grasses. Scattered tamarisk individuals are present within the low terrace and active floodplain of RA 1E, where prolonged saturation occurs after rain events. The substrates within the channel bottoms are generally loose and unconsolidated and composed mostly of fine sand and scattered gravel and pebbles with varying particle size up to 0.2 inch. The bank substrates are consolidated and composed mostly of silt.

#### 5.6.2 Drainage 2: NHD Mapped Ditch

Drainage 2 is a man-made ditch that was documented by the NHD (and partially in the NWI) within the Survey Area. The field investigation confirmed that the ditch is present within the Survey Area, west of proposed well pad 18-32, and does not cross into the Impact Area. Drainage 2 is ephemeral and was dry at the time of the survey. The flow path described below is based on other field indicators.

The ditch originates at Surprise Wash, just north of the Salton Sea Airport. As it travels northwards towards the Survey Area, it receives water from Drainage 1. Drainage 2 then passes through the Survey Area west of proposed well pad 18-32 (RA 2) before it continues north and connects to the Arroyo Salada.

Drainage 2 has an earthen bottom with mostly defined cut banks with a single flow channel within the banks. The length of Drainage 2 within the Survey Area is 62 linear ft. (0 linear ft. within the Impact Area). The OHWM width of Drainage 2 ranges from approximately 5 to 6 ft. and averages approximately 5 ft. The bank-to-bank width ranges from approximately 14 to 16 ft. and averages approximately 15 ft. Sinuosity of the drainage system is low. Hydrological indicators within the active floodplain include a change in average sediment texture, break in bank slope, ripples, mudcracks, and knickpoints. The streambed of Drainage 2 was mostly devoid of vegetation with scattered early successional herbaceous vegetation. The banks were mostly unvegetated with sparse Sonoran creosote scrub, scattered annuals, and non-native grasses. The substrates within the channel bottoms are generally loose and unconsolidated and composed mostly of fine sand and scattered gravel and pebbles with varying particle size up to 0.2 inch. The bank substrates are consolidated and composed mostly of silt.

#### 5.6.3 Drainage 3: Ditch (Not Previously Documented by NWI or NHD)

Drainage 3 is a man-made ditch found during the survey that was not previously documented by the NWI or NHD. The ditch passes through the Survey Area at the proposed access road for well pad 18-32, as well as west of proposed well pad 47-32. Drainage 3 is ephemeral and was dry at the time of the survey. The flow path described below is based on other field indicators.

The ditch originates at Surprise Wash, just north of the Salton Sea Airport. As it travels northwards, Drainage 3 enters the Survey Area (RA 3A), crossing the Impact Area for the proposed access road of well

pad 18-32. Drainage 3 then connects to Drainage 1, diverting water from Drainage 1 north/northeast along the ditch back into the Survey Area (RA 3B), past the western edge of proposed well pad 47-32. Drainage 1 then branches off to the southeast through the Survey Area (RA 1F) as described in Section 5.6.1 above, while Drainage 3 then continues north/northeast and connects to Arroyo Salada.

Drainage 3 has an earthen bottom with mostly defined cut banks with a single flow channel within the banks. The length of Drainage 3 within the Survey Area is approximately 94 linear ft. (21 linear ft. within the Impact Area). The OHWM width of Drainage 3 ranges from approximately 5 to 7 ft., and averages approximately 6 ft. The BTB width ranges from approximately 15 to 17 ft., and averages approximately 16 ft. Sinuosity of the drainage system is low. Hydrological indicators within the active floodplain include a change in average sediment texture, break in bank slope, ripples, mudcracks, and knickpoints. Drainage 3 was mostly bare ground with scattered early successional herbaceous vegetation. The banks were mostly unvegetated with sparse Sonoran creosote scrub, scattered annuals, and non-native grasses. The substrates within the channel bottoms are generally loose and unconsolidated and composed mostly of fine sand and scattered gravel and pebbles with varying particle size up to 0.2 inch. The bank substrates are consolidated and composed mostly of silt.

#### **5.6.4 Drainage 4: NHD Mapped Drainage**

This ephemeral drainage was documented by the NHD southwest of the Survey Area and was included in the analysis of hydrology as a tributary to the drainage system. The field investigation confirmed that the drainage is present and flows in a northeast direction southwest of the Impact Area of proposed well pad 18-32 where it connects to Drainages 1 and 2. Here, a portion of the water continues north along Drainage 2 and connects to Arroyo Salada, and a portion of the water combines with Drainage 1 to flow subsurface eastward in its path to connect to Surprise Wash, then Tule Wash, and ultimately the Salton Sea. Drainage 4 is ephemeral and was dry at the time of the survey.

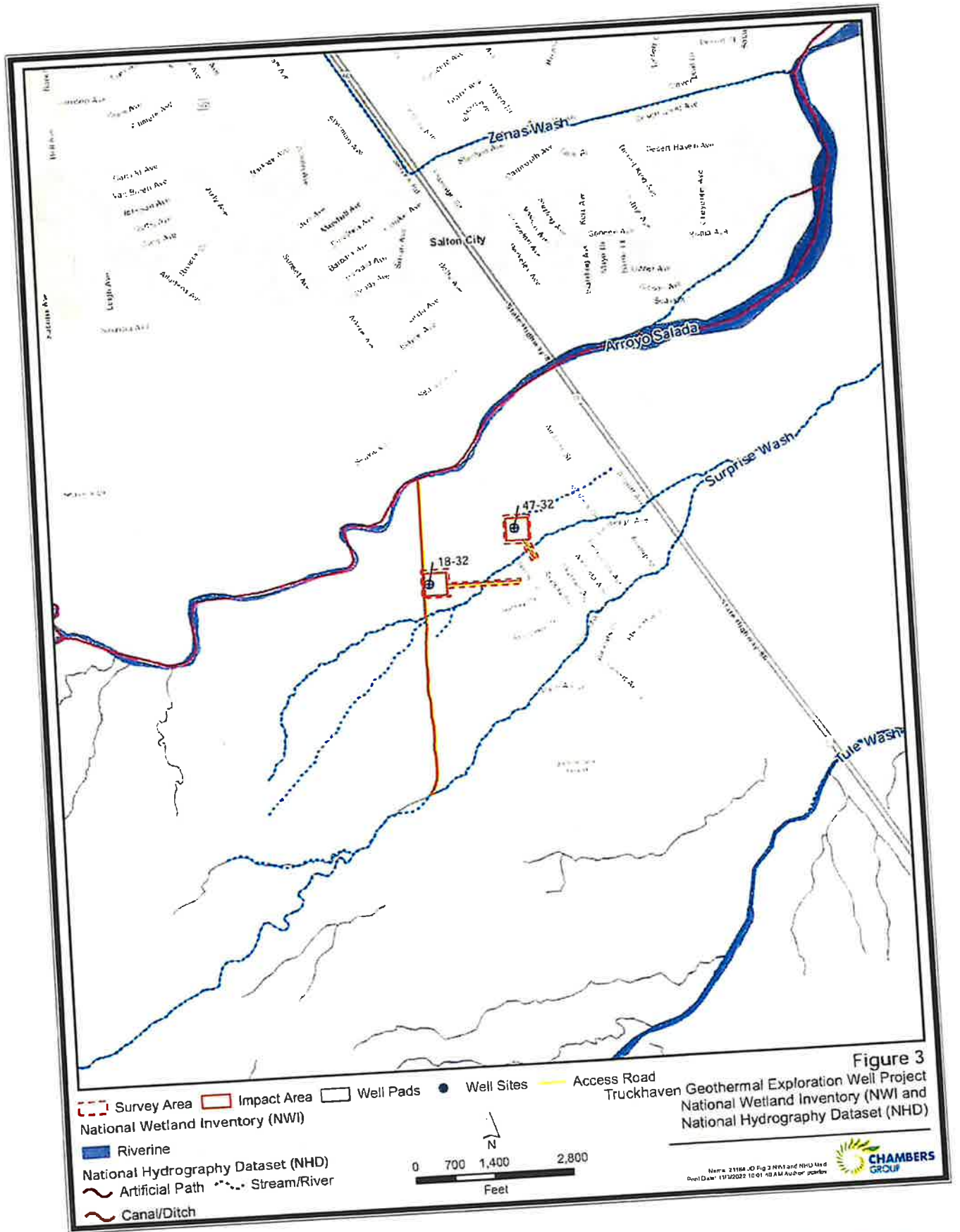
Drainage 4 is over 50 feet from the Impact Area; therefore, no RAs were analyzed for this report. Drainage 4 has mostly defined cut banks with a single flow channel within the banks. Southwest of where it connects to Drainage 2, the OHWM width of Drainage 4 ranges from approximately 9 to 13 ft. and averages approximately 11 ft. The bank-to-bank width ranges from approximately 20 to 25 ft. and averages approximately 22 ft. Sinuosity of the drainage system is moderate. Hydrological indicators within the active floodplain include a break in the bank slope, mudcracks, knickpoints, soil development, change in sediment particle size distribution, and surface relief. The active floodplain and banks of Drainage 4 contain scattered annuals and non-native grasses. The substrates within the channel bottoms are generally loose and unconsolidated and composed mostly of fine sand and scattered gravel with varying particle size up to 0.1 inch. The bank substrates are consolidated and composed mostly of silt.

**Table 1: Jurisdictional Waters within the Project Survey Area**

Non-Wetland Water Resource Feature	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in each non-wetland water feature			Type of vegetation within aquatic resource boundary**	Geographic Location	
			OHWB Width (ft.)	BTB Width (ft.)	Linear Ft. within Survey Area / Impact Area			
Drainage 1	RA* 1D	33.25139	-115.95830	5	15	175 / 18	5% Mid (2% shrub, 3% herb) within active floodplain 10% Early (10% herb) within low terrace	Inland
	RA 1E	33.251445	-115.95654	25	60	220 / 32	60% Late (10% tree, 15% shrub, 35% herb) in active floodplain	Inland
	RA 1F	33.25456	-115.95448	4	15	707 / 352	5% Early (5% herb) in active floodplain 15% Mid (5% shrub, 10% herb) in low terrace	Inland
Drainage 2	RA 2	33.25122	-115.95654	5	15	62 / 0	No vegetation in active floodplain 1% Shrub (1% shrub) in low terrace	Inland
Drainage 3	RA 3A	33.25148	-115.95621	6	16	94 / 21	10% Mid (7% herb, 3% shrub) within active floodplain 5% Early (5% herb) within low terrace	Inland

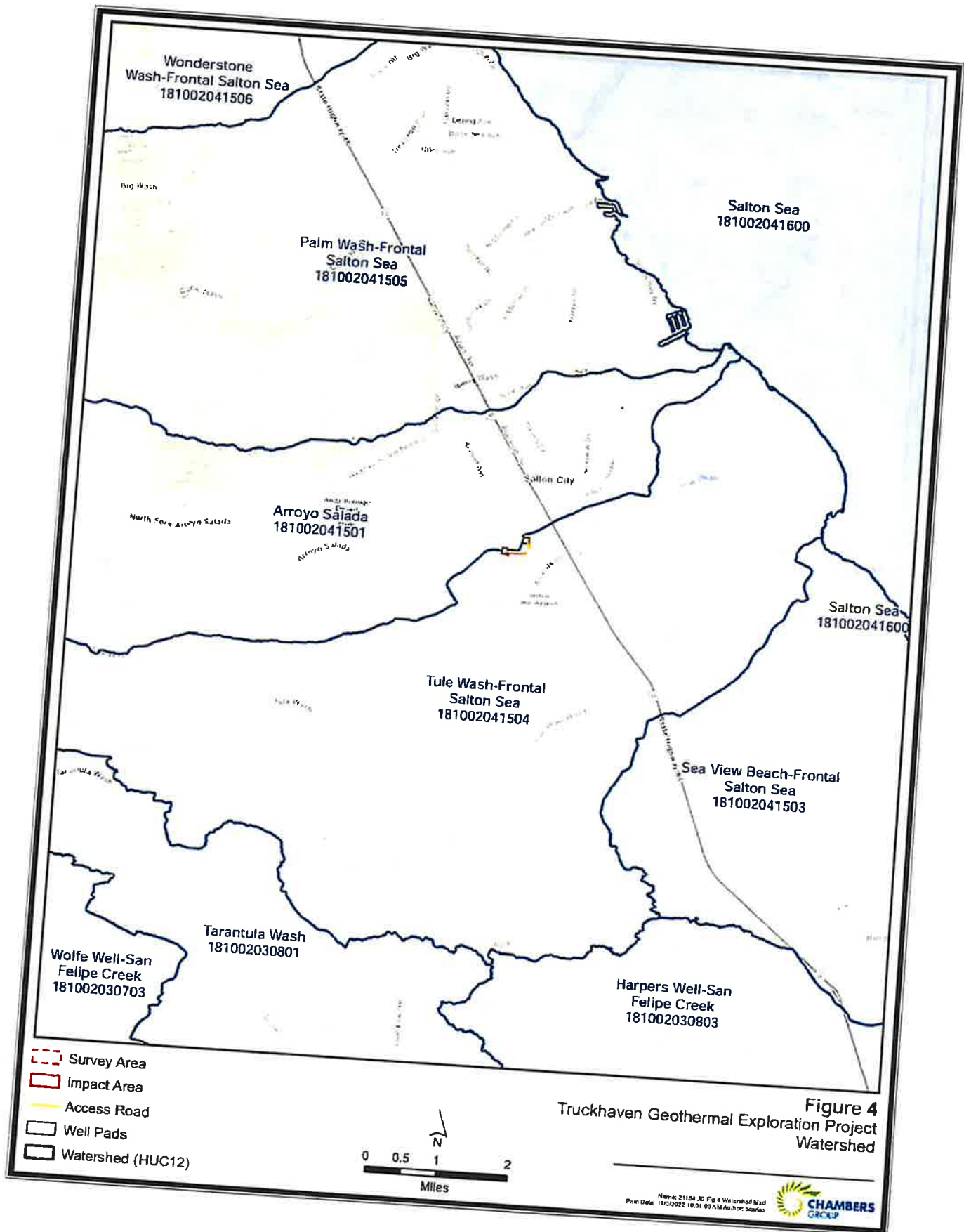
\*Review Area

\*\*Vegetation is classified as one of the following: Early (herbaceous and seedlings), Mid (herbaceous, shrubs, and saplings), and Late (herbaceous, shrubs, and mature trees). Within the Survey Area, tree species consisted of tamarisk, shrub species consisted of burro bush and/or creosote, and the herb species consisted of unidentified annuals and grasses.



EEC ORIGINAL PKG





**Figure 4**  
Truckhaven Geothermal Exploration Project  
Watershed

Name: 21104\_30\_Fig 4 Watershed Map  
Print Date: 11/02/2022 10:01 AM Author: scs/bs



**EEC ORIGINAL PKG**



EEC ORIGINAL PKG

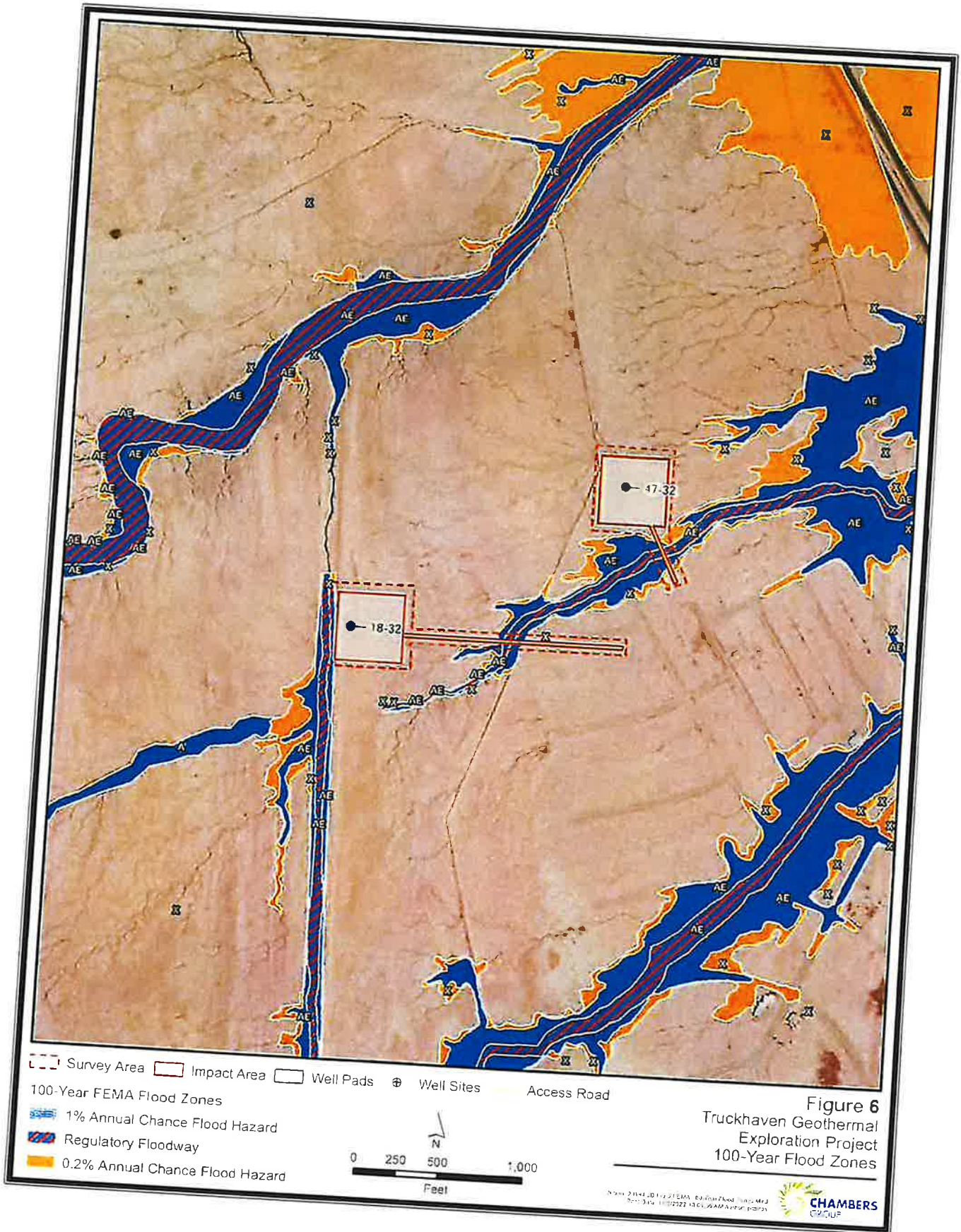


Figure 6  
 Truckhaven Geothermal  
 Exploration Project  
 100-Year Flood Zones

- Survey Area
- Impact Area
- Well Pads
- ⊕ Well Sites
- Access Road
- 100-Year FEMA Flood Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- 0.2% Annual Chance Flood Hazard

Maple 2/14/10 Fig. 2 FEMA 100-Year Flood Zones Map  
 Title Block 10/22/13 CL/SA/AM/ep/ep/ps  
**CHAMBERS GROUP**

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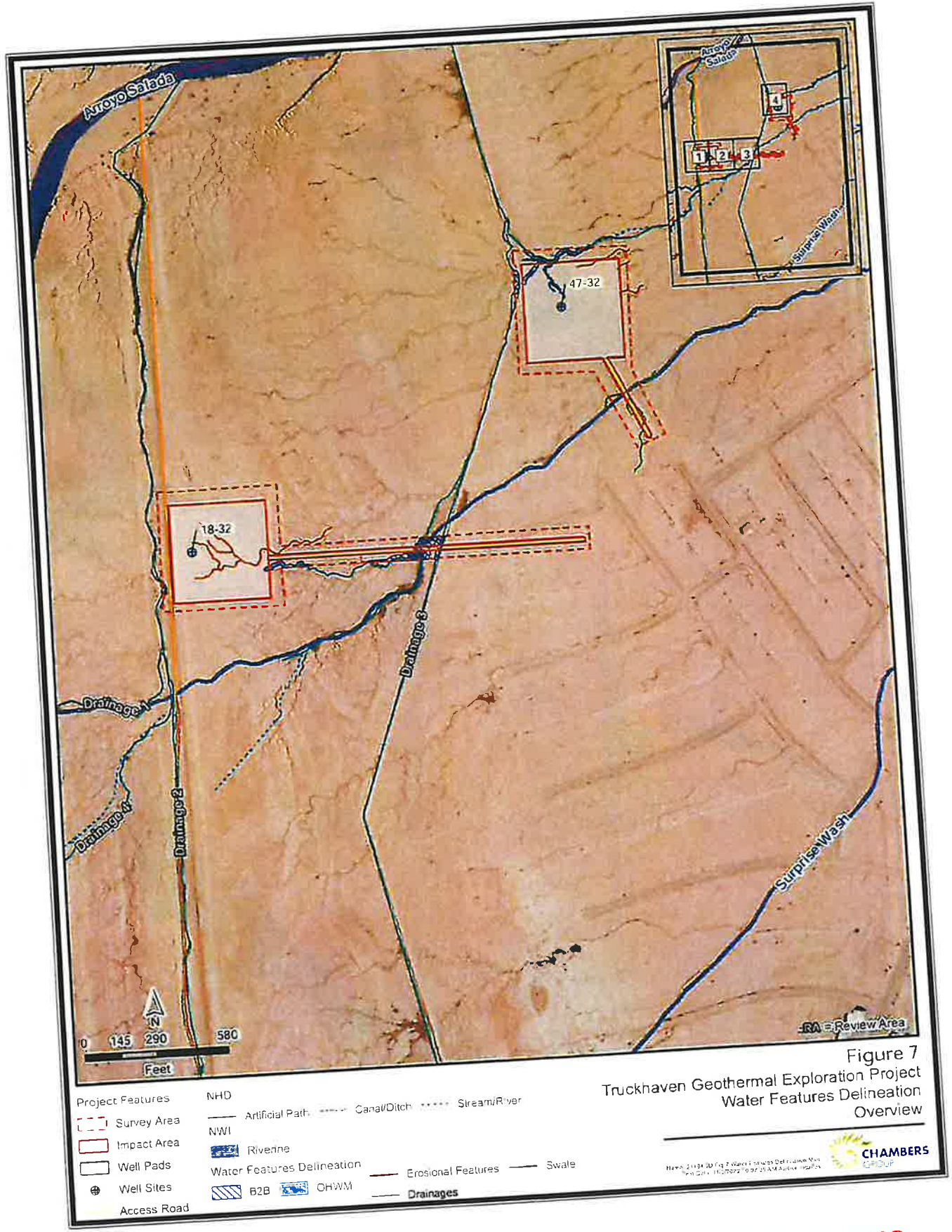
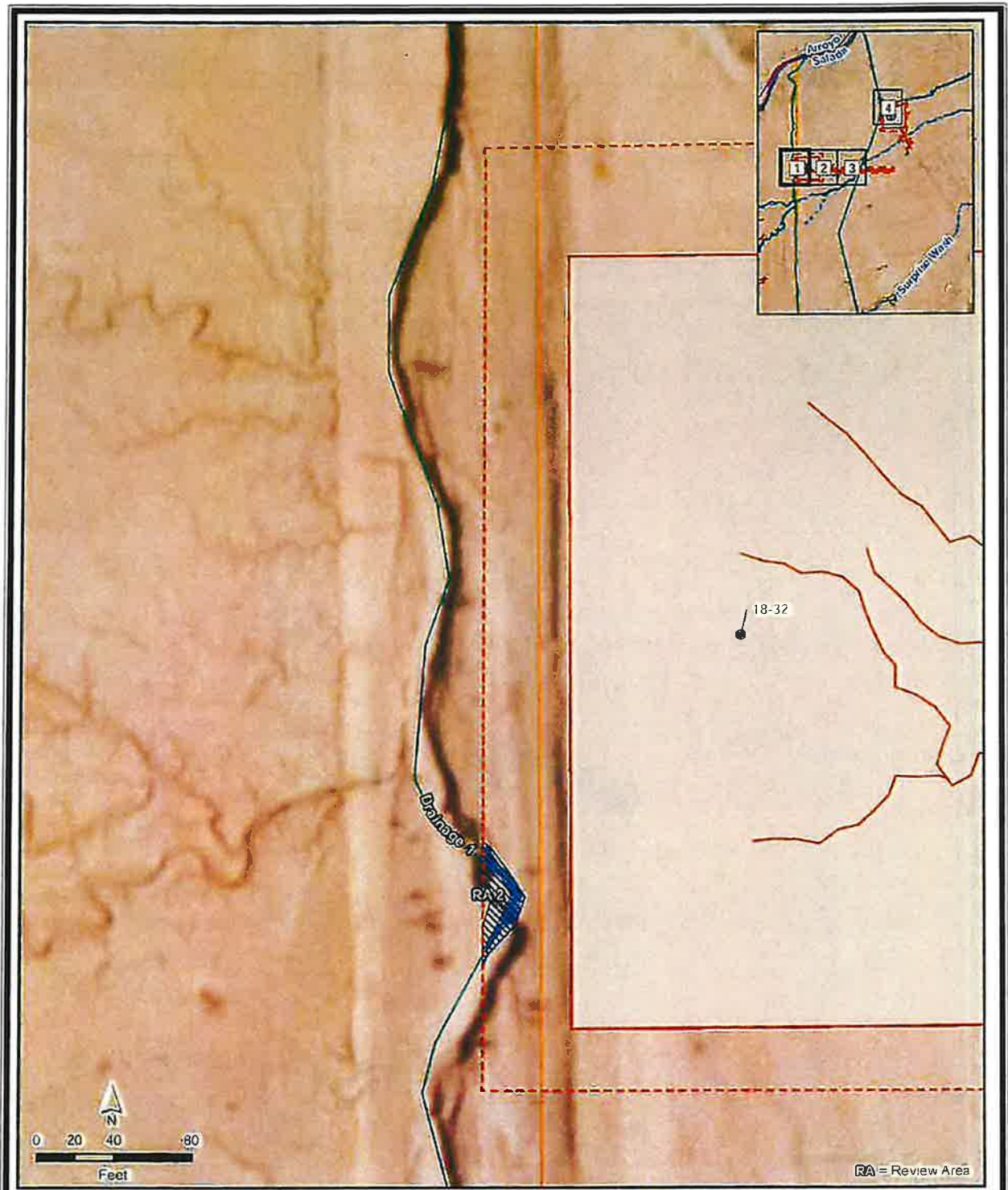


Figure 7  
 Truckhaven Geothermal Exploration Project  
 Water Features Delineation  
 Overview

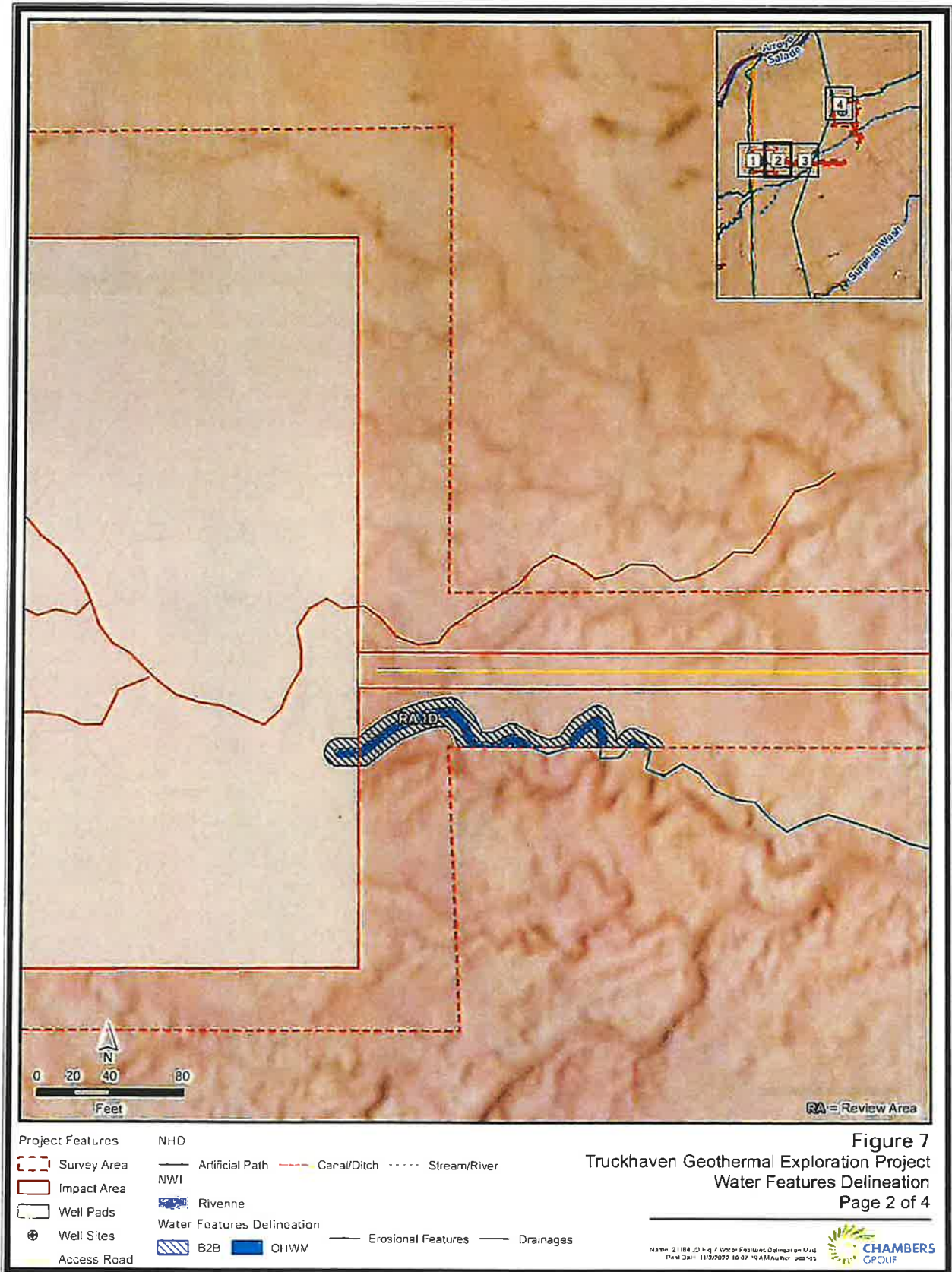
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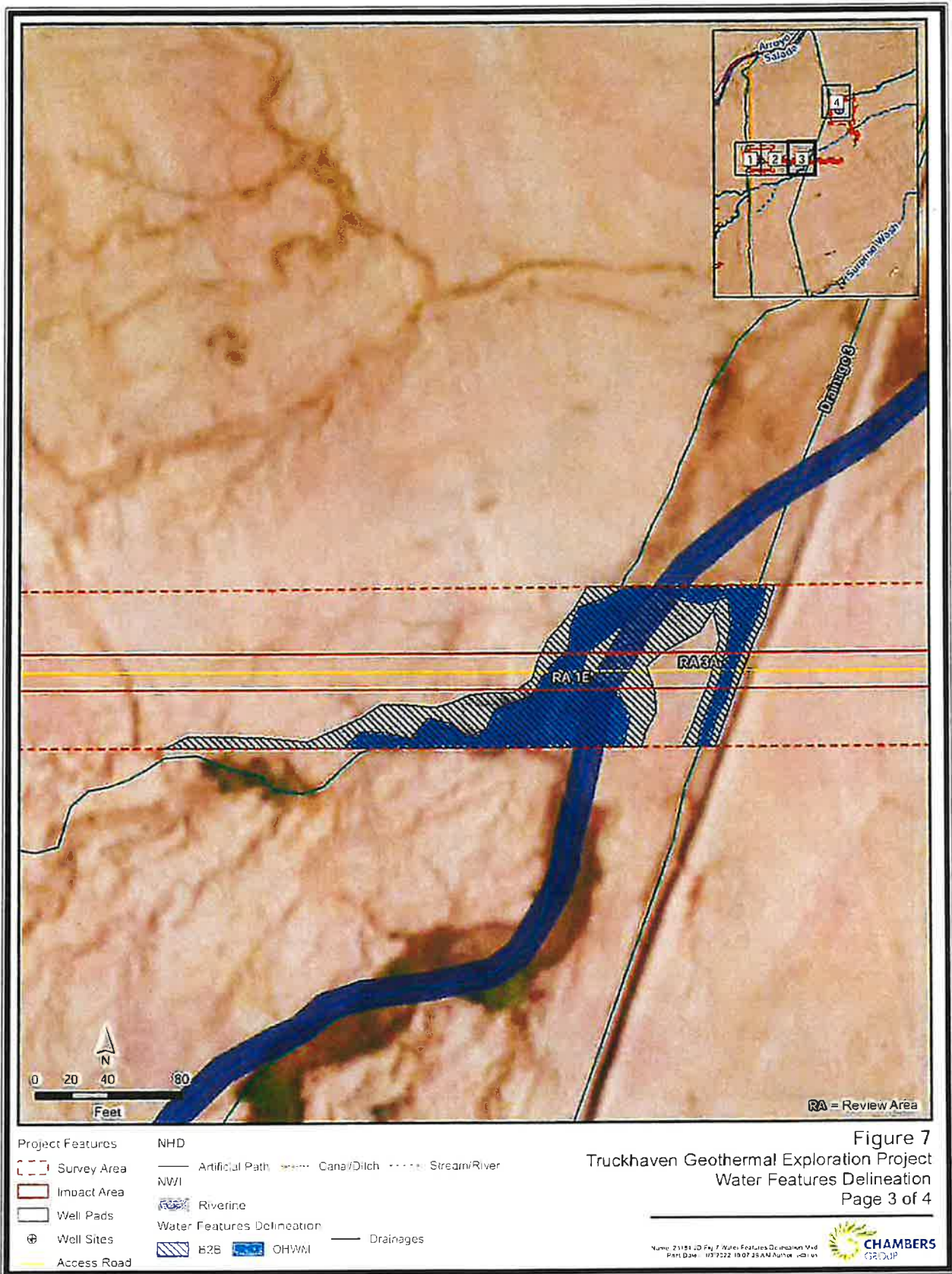


- |                         |                            |
|-------------------------|----------------------------|
| <b>Project Features</b> | <b>NHD</b>                 |
| Survey Area             | Artificial Path            |
| Impact Area             | NWI                        |
| Well Pads               | Riverine                   |
| Well Sites              | Water Features Delineation |
| Access Road             | B2B                        |
|                         | OHWM                       |
|                         | Erosional Features         |
|                         | Drainages                  |

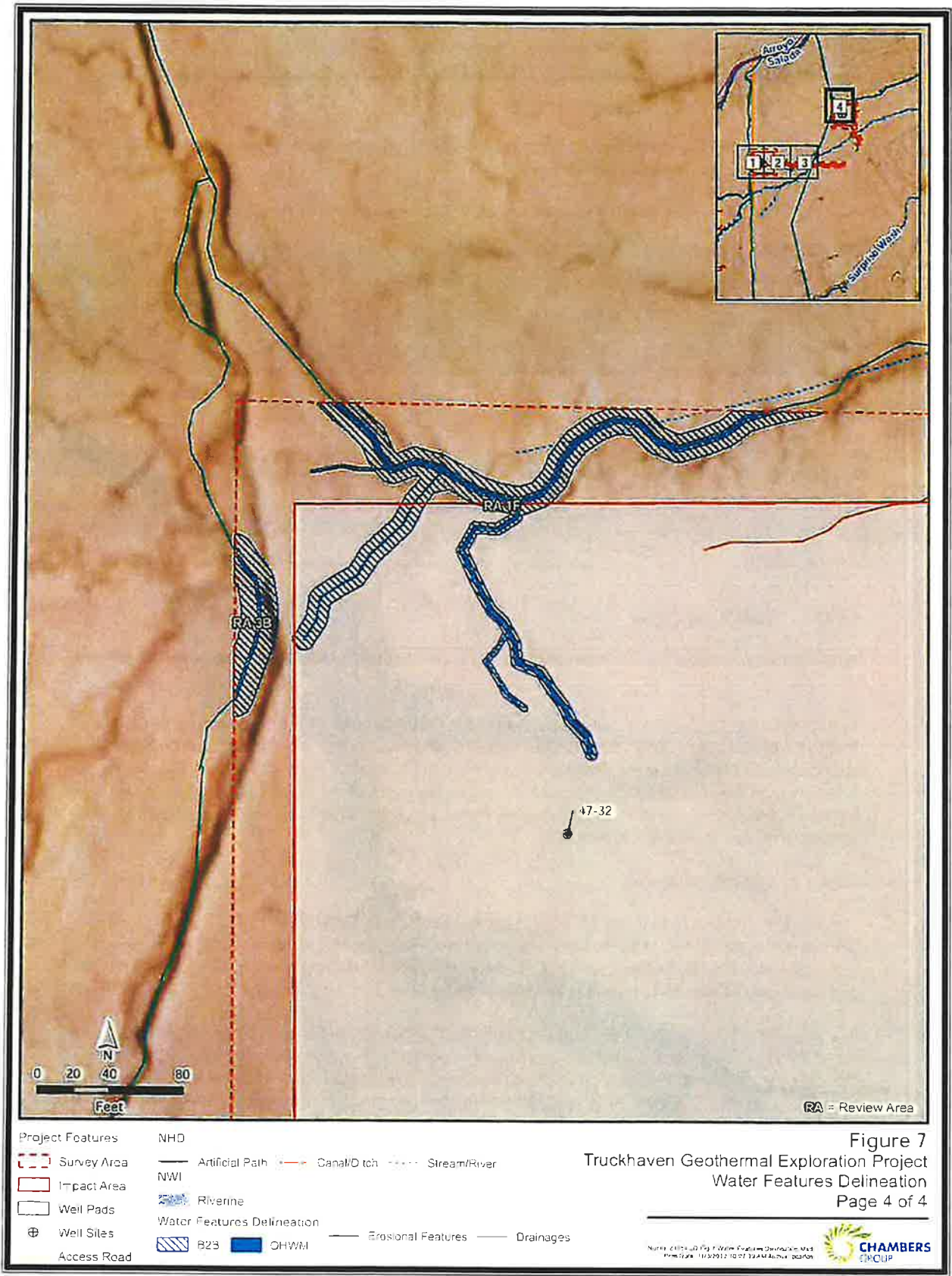
Figure 7  
 Truckhaven Geothermal Exploration Project  
 Water Features Delineation  
 Page 1 of 4

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**5.6.5 Summary of Jurisdictional Findings**

Table 2 summarizes the jurisdictional waters by water feature by regulatory agency. Additional detail by agency is provided in the subsections below.

**Table 2: Jurisdictional Waters within the Project Impact Area by Regulatory Agency**

Non-Wetland Water Resource Feature (Within Impact Area Only)		USACE		RWQCB		CDFW	
		Area (ac)	Linear ft.	Area (ac)	Linear ft.	Area (ac)	Linear ft.
Drainage 1	RA* 1D	0.001	18.22	0.001	18.22	0.006	18.22
	RA 1E	0.011	32.17	0.011	32.17	0.030	32.17
	RA 1F	0.016	352.01	0.016	352.01	0.061	352.01
<b>Totals for Drainage 1</b>		<b>0.028</b>	<b>402.409</b>	<b>0.028</b>	<b>402.409</b>	<b>0.096</b>	<b>402.409</b>
Drainage 3	RA 3A	0.004	21.24	0.004	21.24	0.008	21.24
<b>Totals for Drainage 3</b>		<b>0.004</b>	<b>21.24</b>	<b>0.004</b>	<b>21.24</b>	<b>0.008</b>	<b>21.24</b>
<b>Grand Totals</b>		<b>0.032</b>	<b>423.65</b>	<b>0.032</b>	<b>423.65</b>	<b>0.104</b>	<b>423.65</b>

\*Review Area

**5.6.6 USACE Jurisdiction**

For the purposes of USACE jurisdiction only, the Jurisdictional Determination Form is provided in Appendix D.

The limits of USACE jurisdiction within the Impact Area were defined by the OHWM of all jurisdictional features. Approximately 0.032 acre (423.65 linear ft.) of USACE jurisdictional features occur within the Impact Area. The Project is in the design phase and the exact location of Project features within the Impact Area have not been finalized. The location of Project features will be revised to minimize to avoid or minimize impacts to sensitive aquatic resources; therefore, temporary and permanent impacts to USACE jurisdiction have not yet been determined.

**5.6.7 RWQCB Jurisdiction**

The RWQCB jurisdiction includes all USACE jurisdictional areas, OHWMs or HWMs in non-Relatively Permanent Water (RPW), isolated wetlands, and any other features that have an effect on surface or subsurface water quality within California. The limits of RWQCB jurisdiction were defined by the OHWM and surface waterbody features within the Project footprint.

Approximately 0.032 acre (423.65 linear ft.) of RWQCB jurisdictional features occur within the Impact Area. The Project is in the design phase and the exact location of Project features within the Impact Area have not been finalized. The location of Project features will be revised to avoid or minimize impacts to sensitive aquatic resources; therefore, temporary and permanent impacts to RWQCB jurisdiction have not yet been determined.

**5.6.8 CDFW Jurisdiction**

The CDFW takes jurisdiction to the top of the bank on either side of a drainage or to the outer edge of all riparian vegetation, whichever measurement is greater.

Approximately 0.104 acre (423.65 linear ft.) of CDFW jurisdictional features occur within the Impact Area. The Project is in the design phase and the exact location of Project features within the Impact Area have not been finalized. The location of Project features will be revised to minimize to avoid or minimize impacts to sensitive aquatic resources; therefore, temporary and permanent impacts to CDFW jurisdiction have not yet been determined.

**SECTION 6.0 – CONCLUSION**

Table 3 provides a summary of acreages of Jurisdictional Waters that occur within the Impact Area.

**Table 3: Summary of Acreages of Jurisdictional Waters Within the Impact Area**

Authority	Wetlands	Riparian	Streambed/ Lake	Other Waters	Total
USACE	0.00	N/A	N/A	0.032	0.032
RWQCB	0.00	0.00	N/A	0.032	0.032
CDFW	0.00*	0.00	0.104	N/A	0.104

\*Note: Wetlands are identified for CDFW consideration of whether a net loss of wetlands would occur.

**6.1 FEDERAL PERMITS**

Based on this delineation, USACE has jurisdiction over a total of 0.032 acres (423.65 linear ft.) of WOUS. As the exact siting of the Project components have not yet been determined at the time of this report, temporary and permanent impacts have not been calculated. This Project may require a CWA Section 404 Permit.

**6.2 STATE PERMITS**

Based on this delineation, RWQCB has jurisdiction over a total of 0.032 acres (423.65 linear ft.) of waters of the State. As the exact siting of the Project components have not yet been determined at the time of this report, temporary and permanent impacts have not been calculated. Under Section 401 of the CWA, the RWQCB regulates any activity that requires a federal permit for discharges to a water body. A 401 Water Quality Certification may be required from the RWQCB for this Project.

Based on this delineation, CDFW has jurisdiction over a total of 0.104 acres (423.65 linear ft.) of waters of the State. Riparian vegetation does not occur within and/or adjacent to the water features within the Project footprint. CDFW regulates impacts or alterations to streambeds, including any obstruction or diversion to the natural flow of a stream, substantial change or use of material from a stream, or a deposit or disposal of any debris into a stream as part of Fish and Game Code Sections 1600-02. A Streambed Alteration Agreement (SAA) may be required from CDFW for this Project.

*Jurisdictional Delineation Report  
for the Truckhaven Geothermal Exploration Well Project  
Salton City, Imperial County, California*

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**SECTION 7.0 – PREPARERS**

<b><u>Agency/Company/Firm</u></b>	<b><u>Name</u></b>
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**APPENDIX A – REGULATORY FRAMEWORK**





## **Federal Jurisdiction**

### USACE

Pursuant to Section 404 of the CWA, the USACE regulates the discharge of dredged and/or fill material into waters of the United States.

Wetlands are defined by 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support ... a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987, USACE published a manual (1987 Wetland Manual) to guide its field personnel in determining jurisdictional wetland boundaries. This manual was amended in 2008 to the USACE 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (2008 Arid West Supplement). Currently, the 1987 Wetland Manual and the 2008 Arid West Supplement provide the legally accepted methodology for identification and delineation of USACE-jurisdictional wetlands in southern California.

In the absence of wetlands, the limits of USACE jurisdiction in nontidal waters, including intermittent RPW streams, extend to the OHWM, which is defined by 33 CFR 328.3(e) as:

*... that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

On January 9, 2001, the U.S. Supreme Court ruled (in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*) (SWANCC) that USACE jurisdiction does not extend to previously regulated isolated waters, including but not limited to isolated ponds, reservoirs, and wetlands. Examples of isolated waters that are affected by this ruling include vernal pools, stock ponds, lakes (without outlets), playa lakes, and desert washes that are not tributary to navigable or interstate waters or to other jurisdictional waters. A joint legal memorandum by EPA and USACE was signed on January 15, 2003.

In May 2007, USACE and EPA jointly published and authorized the use of the *Jurisdictional Determination Form Instructional Guidebook* (USACE 2007). The form and guidebook define how to determine if an area is USACE jurisdictional and if a significant nexus exists per the Rapanos decision. A nexus must have more than insubstantial and speculative effects on the downstream TNW to be considered a significant nexus. This guidebook is updated by the 2008 Arid West Supplement, the 2010 *Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*, and the 2011 *Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region*.

A joint guidance by EPA and USACE was issued on June 5, 2007, and revised on December 2, 2008, is consistent with the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208 [2006]) (*Rapanos*), which addresses the jurisdiction over waters of the United States under the CWA (33 U.S.C. §1251 et seq.). A draft guidance was circulated in April 2011 to supersede both the 2003 SWANCC guidance and 2008 *Rapanos* decision and was published in 2015; however, this guidance was immediately litigated and suspended until January 2018, when the guidance was reversed by the U.S. Supreme Court and officially repealed in September 2019.

A new Navigable Waters Protection Rule was published on April 21, 2020 and became effective on June 22, 2020.

The EPA and USACE received the U.S. District Court for the District of Arizona's August 30, 2021, order "vacating and remanding the Navigable Waters Protection Rule in the case of Pascua Yaqui Tribe v. U.S. Environmental Protection Agency." The agencies have halted implementation of the Navigable Waters Protection Rule (NWPR) and are interpreting "waters of the United States" consistent with the pre-2015 regulatory regime. On November 18, 2021, the agencies announced the signing of a proposed rule revising the definition of "waters of the United States," which proposes to put back into place the pre-2015 definition of "waters of the United States."

The term "waters of the United States" is defined by pre-2015 regulations as: (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all other waters (e.g., lakes, rivers, intermittent streams) that could affect interstate or foreign commerce, (4) all impoundments of waters mentioned above, (5) all tributaries to waters mentioned above, (6) the territorial seas, and (7) all wetlands adjacent to waters mentioned above. Waters of the United States do not include (1) waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA, and (2) prior converted cropland. Waters of the United States typically are separated into two types: (1) wetlands and (2) "other waters" (non-wetlands) of the United States.

#### **State Jurisdiction**

The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the CWA as well as the California Porter-Cologne Water Quality Control Act (Porter-Cologne; California Water Code, Division 7, §13000 et seq.). Waters of the State are defined by Water Code Section 13050(e) as "any surface water or groundwater, including saline waters, within the boundaries of the state." Waters of the State broadly includes all waters within the State's boundaries (public or private), including waters in both natural and artificial channels. Under State law, the territorial seas extend 3 nautical miles beyond outmost islands, reefs, and rocks and includes all waters between the islands and the coast.

The State Water Resources Control Board adopted a new State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), which conform to Executive Order W-59-93, commonly referred to as California's "no net loss" policy for wetlands.

The Water Boards define an area as wetland as follows: "if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation."

"Waters of the State" includes all "waters of the U.S." The following wetlands are waters of the State:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands

that meet any of the following criteria:

- a. Approved by an agency as compensatory mitigation for impacts to other waters of the State, except where the approving agency explicitly identifies the mitigation as being of limited duration;
- b. Specifically identified in a water quality control plan as a wetland or other water of the State;
- c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
- d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):
  - i. Industrial or municipal wastewater treatment or disposal,
  - ii. Settling of sediment,
  - iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
  - iv. Treatment of surface waters,
  - v. Agricultural crop irrigation or stock watering,
  - vi. Fire suppression,
  - vii. Industrial processing or cooling,
  - viii. Active surface mining – even if the site is managed for interim wetlands functions and values
  - ix. Log storage,
  - x. Treatment, storage, or distribution of recycled water, or
  - xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
  - xii. Fields flooded for rice growing.

**RWQCB**

Under Porter-Cologne, the State Water Resources Control Board (SWRCB) and the local RWQCB regulate the discharge of waste into waters of the State. Discharges of waste include “fill, any material resulting from human activity, or any other ‘discharge’ that may directly or indirectly impact ‘waters of the state.’” Porter-Cologne reserves the right for the State to regulate activities that could affect the quantity and/or quality of surface and/or groundwaters, including isolated wetlands, within the State. Wetlands were defined as waters of the State if they demonstrated both wetland hydrology and hydric soils. Waters of

the State determined to be jurisdictional for these purposes require, if impacted, waste discharge requirements (WDRs).

When an activity results in fill or discharge directly below the OHWM of jurisdictional waters of the United States (federal jurisdiction), including wetlands, a CWA Section 401 Water Quality Certification is required. If a proposed project is not subject to CWA Section 401 certification but involves activities that may result in a discharge to waters of the State, the project may still be regulated under Porter-Cologne and may be subject to waste discharge requirements. In cases where waters apply to both CWA and Porter-Cologne, RWQCB may consolidate permitting requirements to one permit.

### CDFW

Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation" (California Code of Regulations, Title 14, Section 1.72). The jurisdiction of CDFW may include areas in or near intermittent streams, ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams that are indicated on USGS maps, watercourses that may contain subsurface flows, or within the flood plain of a water body. CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW limits of jurisdiction typically include the maximum extents of the uppermost bank-to-bank distance and/or the outermost extent of riparian vegetation dripline, whichever measurement is greater.

In a CDFW guidance of stream processes and forms in dryland watersheds (Vyverberg 2010), streams are identified as having one or more channels that may all be active or receive water only during some high flow event. Subordinate features, such as low flow channels, active channels, banks associated with secondary channels, floodplains, and stream-associated vegetation, may occur within the bounds of a single, larger channel. The water course is defined by the topography or elevations of land that confine a stream to a definite course when its waters rise to their highest level. A watercourse is defined as a stream with boundaries defined by the maximal extent or expression on the landscape even though flow may otherwise be intermittent or ephemeral.

Artificial waterways such as ditches (including roadside ditches), canals, aqueducts, irrigation ditches, and other artificially created water conveyance systems also may be under the jurisdiction of CDFW. CDFW may claim jurisdiction over these features based on the presence of habitat characteristics suitable to support aquatic life, riparian vegetation, and/or stream-dependent terrestrial wildlife. As with natural waterways, the limit of CDFW jurisdiction of artificial waterways includes the uppermost bank-to-bank distance and/or the outermost extent of riparian vegetation dripline, whichever measurement is greater.

CDFW does not have jurisdiction over wetlands, but has jurisdiction to protect against a net loss of wetlands. CDFW supports the wetland criteria recognized by the USFWS; one or more indicators of wetland conditions must exist for wetlands conditions to be considered present. The following is the USFWS-accepted definition of a wetland:

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports hydrophytes, (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

In *A Clarification of the U.S. Fish and Wildlife Service's Wetland Definition* (Tiner 1989), the USFWS definition was further clarified "that in order for any area to be classified as wetland by the Service, the area must be periodically saturated or covered by shallow water, whether wetland vegetation and/or hydric soils are present or not; this hydrologic requirement is addressed in the first sentence of the definition." When considering whether an action would result in a net loss of wetlands, CDFW will extend jurisdiction to USFWS-defined wetland conditions where such conditions exist within the riparian vegetation that is associated with a stream or lake and does not depend on whether those features meet the three-parameter USACE methodology of wetland determination. If impacts to wetlands under the jurisdiction of CDFW are unavoidable, a mitigation plan will be implemented in coordination with CDFW to support the CDFW policy of "no net loss" of wetland habitat.

**APPENDIX B – ORDINARY HIGH WATER MARK FORMS**



## Arid West Ephemeral and Intermittent Streams OHW M Datasheet

<b>Project:</b> Truckee <b>Project Number:</b> 21184 <b>Stream:</b> Review Area 1F (Data point 1A-1) <b>Investigator(s):</b> L. Gorman, G. Olmos		<b>Date:</b> 4/26/2022 <b>Town:</b> <b>Photo begin file#:</b>	<b>Time:</b> <b>State:</b> CA <b>Photo end file#:</b>
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b> Apprx. 50 ft W of access road crossing <b>Projection:</b> _____ <b>Datum:</b> _____ <b>Coordinates:</b> _____		
<b>Potential anthropogenic influences on the channel system:</b> Evidence of off-roading activity. Old power poles (wooden) dumped into streambed approx. 50 ft W of collection point			
<b>Brief site description:</b> Dry bottom wash along northern buffer of pad.			
<b>Checklist of resources (if available):</b>			
<input checked="" type="checkbox"/> Aerial photography Dates: _____ <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies		<input type="checkbox"/> Stream gage data Gage number: _____ Period of record: _____ <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event	
<b>Hydrogeomorphic Floodplain Units</b>			
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW M:</b>			
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> <li>a) Record the floodplain unit and GPS position.</li> <li>b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.</li> <li>c) Identify any indicators present at the location.</li> </ol> 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW M and record the indicators. Record the OHW M position via:			
<input type="checkbox"/> Mapping on aerial photograph <input type="checkbox"/> Digitized on computer		<input checked="" type="checkbox"/> GPS <input type="checkbox"/> Other: _____	

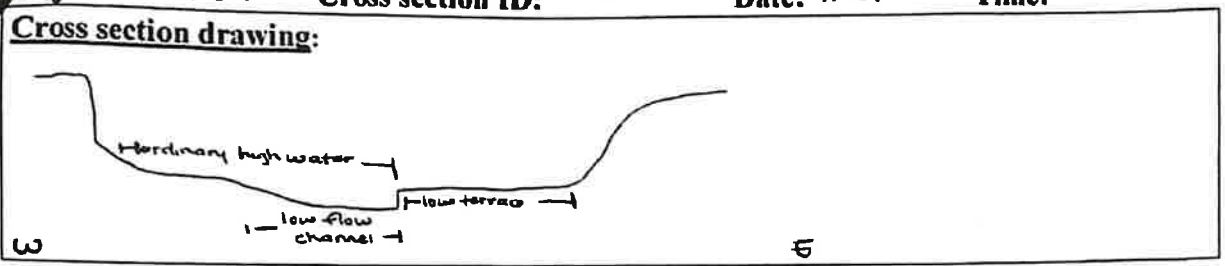
### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class
10.08	256	Boulder
2.56	64	Cobble
0.157	4	Pebble
0.079	2.00	Granule
0.039	1.00	Very coarse sand
0.020	0.50	Coarse sand
1/2 0.0088	0.25	Medium sand
1/4 0.005	0.125	Fine sand
1/8 0.0025	0.0625	Very fine sand
1/16 0.0012	0.031	Coarse silt
1/32 0.00061	0.0156	Medium silt
1/64 0.00031	0.0078	Fine silt
1/128 0.00015	0.0039	Very fine silt
		Clay





Project ID: 21104 Cross section ID: <sup>Ephemeral stream</sup> 1A-1 Date: 4/20/22 Time:



**OHWM**

GPS point: 33.2545917, -115.9545605

**Indicators:**

<input type="checkbox"/> Change in average sediment texture	<input checked="" type="checkbox"/> Break in bank slope
<input type="checkbox"/> Change in vegetation species	<input checked="" type="checkbox"/> Other: <u>mudcracks</u>
<input type="checkbox"/> Change in vegetation cover	<input checked="" type="checkbox"/> Other: <u>Knickpoint</u>

**Comments:**

**Floodplain unit:**     Low-Flow Channel     Active Floodplain     Low Terrace

GPS point: 33.2545917, -115.9545605

**Characteristics of the floodplain unit:**  
 Average sediment texture: fine silt  
 Total veg cover: 5 %    Tree:      %    Shrub:      %    Herb: 5 %

**Community successional stage:**

<input type="checkbox"/> NA	<input type="checkbox"/> Mid (herbaceous, shrubs, saplings)
<input checked="" type="checkbox"/> Early (herbaceous & seedlings)	<input type="checkbox"/> Late (herbaceous, shrubs, mature trees)

**Indicators:**

<input checked="" type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input checked="" type="checkbox"/> Other: <u>knickpoints</u>
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: <u>    </u>
<input checked="" type="checkbox"/> Benches	<input type="checkbox"/> Other: <u>    </u>

**Comments:**

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2546079, -115.9545380

Characteristics of the floodplain unit:

Average sediment texture: gravel/cobble within very fine sand

Total veg cover: 15 % Tree:      % Shrub: 5 % Herb: 10 %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

Comments:

Floodplain unit:  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

Characteristics of the floodplain unit:

Average sediment texture: \_\_\_\_\_

Total veg cover:      % Tree:      % Shrub:      % Herb:      %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

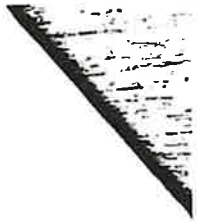
Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

Comments:

### Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> <del>THE Truckee</del> <b>Project Number:</b> 21184 <b>Stream:</b> Review Area 1F (Data Point 1A-2) <b>Investigator(s):</b> L. Gorman, E. Olmes	<b>Date:</b> <b>Town:</b> <b>Photo begin file#:</b>	<b>Time:</b> <b>State:</b> <b>Photo end file#:</b>
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?  Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b>  <b>Projection:</b> _____ <b>Datum:</b> _____ <b>Coordinates:</b> _____	
<b>Potential anthropogenic influences on the channel system:</b>		
<b>Brief site description:</b>		
<b>Checklist of resources (if available):</b> <input checked="" type="checkbox"/> Aerial photography Dates: _____ <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies		
<input type="checkbox"/> Stream gage data Gage number: _____ Period of record: _____ <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<b>Hydrogeomorphic Floodplain Units</b>		
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <input type="checkbox"/> Mapping on aerial photograph <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Digitized on computer <input type="checkbox"/> Other:		



### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.03	258	Boulder	Gravel
2.56	64	Cobble	
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	Sand
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	Silt
1/16 0.0012	0.031	Medium silt	
1/32 0.00081	0.0156	Fine silt	
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID:

Cross section ID:

Date:

Time:

**Cross section drawing:**



**OHWM**

GPS point: 33.2546542, -115.9540918

**Indicators:**

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: knickpoint
- Other: \_\_\_\_\_

**Comments:**

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2546542, -115.9540918

**Characteristics of the floodplain unit:**

Average sediment texture: fine silt  
Total veg cover: 5 % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: 5 %

**Community successional stage:**

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

**Indicators:**

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: knickpoint
- Other: particle size distribution change
- Other: \_\_\_\_\_

**Comments:**

Project ID: \_\_\_\_\_ Cross section ID: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2546749, -115.95410924

**Characteristics of the floodplain unit:**

Average sediment texture: very fine sand  
Total veg cover: 15 % Tree:      % Shrub: 5 % Herb: 10 %

Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

- |   |  |
|---|--|
| <input type="checkbox"/> Mudcracks                | <input type="checkbox"/> Soil development          |
| <input type="checkbox"/> Ripples                  | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris      | <input type="checkbox"/> Other: _____              |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____              |
| <input type="checkbox"/> Benches                  | <input type="checkbox"/> Other: _____              |

Comments:

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_  
Total veg cover:      % Tree:      % Shrub:      % Herb:      %

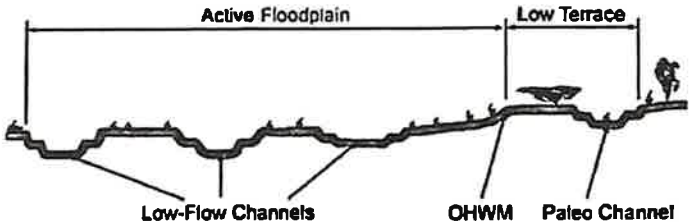
Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

- |   |   |
|---|---|
| <input type="checkbox"/> Mudcracks                | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples                  | <input type="checkbox"/> Surface relief   |
| <input type="checkbox"/> Drift and/or debris      | <input type="checkbox"/> Other: _____     |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____     |
| <input type="checkbox"/> Benches                  | <input type="checkbox"/> Other: _____     |

Comments:

## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Truckhaven <b>Project Number:</b> 21124 <b>Stream:</b> Remnant/Swale (Data point 2A-1) <b>Investigator(s):</b> L. Gorman, T. Olmos	<b>Date:</b> 4/20/22 <b>Town:</b> <b>Photo begin file#:</b>	<b>Time:</b> <b>State:</b> CA <b>Photo end file#:</b>
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?  Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b>  <b>Projection:</b> _____ <b>Datum:</b> _____ <b>Coordinates:</b> _____	
<b>Potential anthropogenic influences on the channel system:</b> <i>Road crosses channel. Evidence of off-road usage to the west within approx 40 ft.</i>		
<b>Brief site description:</b>  		
<b>Checklist of resources (if available):</b> <input checked="" type="checkbox"/> Aerial photography <input type="checkbox"/> Stream gage data Dates: _____      Gage number: _____ <input type="checkbox"/> Topographic maps <input type="checkbox"/> Period of record: _____ <input type="checkbox"/> Geologic maps <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Soils maps <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies		
<b>Hydrogeomorphic Floodplain Units</b> 		
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <input type="checkbox"/> Mapping on aerial photograph <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Digitized on computer <input type="checkbox"/> Other: _____		



### Wentworth Size Classes

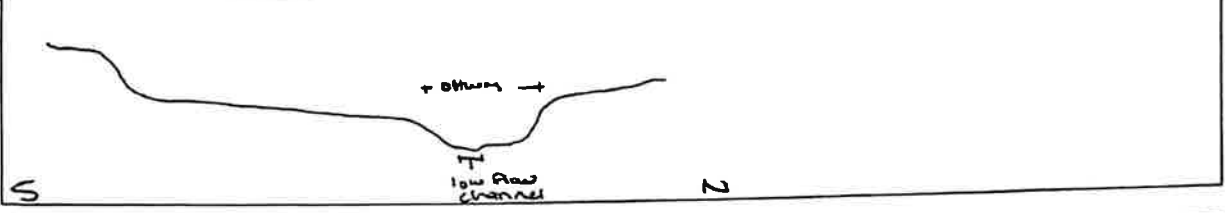
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	258	Boulder	Gravel
2.58	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud





Project ID: \_\_\_\_\_ Cross section ID: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Cross section drawing:



**OHWM**

GPS point: 33.2535701, -115.9534782

**Indicators:**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input type="checkbox"/> Break in bank slope                  |
| <input type="checkbox"/> Change in vegetation species                  | <input checked="" type="checkbox"/> Other: <u>knick point</u> |
| <input type="checkbox"/> Change in vegetation cover                    | <input checked="" type="checkbox"/> Other: <u>mudcracks</u>   |

Comments:

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2535701, -115.9534782

**Characteristics of the floodplain unit:**

Average sediment texture: fine sand  
 Total veg cover: 10 % Tree:      % Shrub:      % Herb: 10 %

**Community successional stage:**

- |  |  |
|--|--|
| <input type="checkbox"/> NA  | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)      |
| <input checked="" type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

**Indicators:**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Mudcracks     | <input type="checkbox"/> Soil development                     |
| <input type="checkbox"/> Ripples                  | <input type="checkbox"/> Surface relief                       |
| <input type="checkbox"/> Drift and/or debris      | <input checked="" type="checkbox"/> Other: <u>knick point</u> |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____                         |
| <input type="checkbox"/> Benches                  | <input type="checkbox"/> Other: _____                         |

Comments:

sheet flow all along throughout length of channel, into floodplain

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2530465, -115.9534718

Characteristics of the floodplain unit:

Average sediment texture: coarse sand

Total veg cover: 5% Tree: \_\_\_\_\_% Shrub: \_\_\_\_\_% Herb: 5%

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

Comments:

Floodplain unit:  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

Characteristics of the floodplain unit:

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_% Tree: \_\_\_\_\_% Shrub: \_\_\_\_\_% Herb: \_\_\_\_\_%

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

Comments:

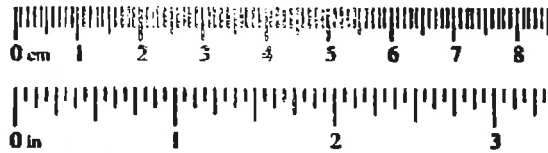
## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Truckee <b>Project Number:</b> 21184 <b>Stream:</b> Remnant / Swale (Data point 2A-2) <b>Investigator(s):</b> L. Gorman, E. Olmos	<b>Date:</b> 4/26/22 <b>Time:</b> <b>Town:</b> <b>State:</b> <b>Photo begin file#:</b> <b>Photo end file#:</b>				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?	<b>Location Details:</b> upstream of access road				
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Projection:</b> <b>Datum:</b> <b>Coordinates:</b>				
<b>Potential anthropogenic influences on the channel system:</b>					
<b>Brief site description:</b>					
<b>Checklist of resources (if available):</b>					
<input checked="" type="checkbox"/> Aerial photography Dates: <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event				
<b>Hydrogeomorphic Floodplain Units</b>					
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b>					
<ol style="list-style-type: none"> <li>1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.</li> <li>2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.</li> <li>3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.           <ol style="list-style-type: none"> <li>a) Record the floodplain unit and GPS position.</li> <li>b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.</li> <li>c) Identify any indicators present at the location.</li> </ol> </li> <li>4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.</li> <li>5. Identify the OHWM and record the indicators. Record the OHWM position via:           <table style="width: 100%; margin-left: 20px;"> <tr> <td><input type="checkbox"/> Mapping on aerial photograph</td> <td><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> </li> </ol>		<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				



### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.00	250	Boulder	Gravel
2.50	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00081	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



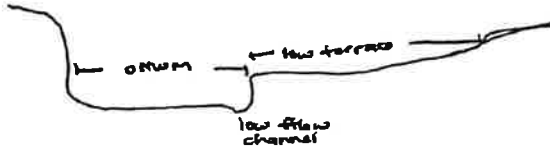
Project ID:

Cross section ID:

Date:

Time:

**Cross section drawing:**



**OHWM**

GPS point: 33.2530056, -115.9537642

**Indicators:**

- |   |   |
|---|---|
| <input type="checkbox"/> Change in average sediment texture | <input type="checkbox"/> Break in bank slope                |
| <input type="checkbox"/> Change in vegetation species       | <input checked="" type="checkbox"/> Other: <u>mudcracks</u> |
| <input type="checkbox"/> Change in vegetation cover         | <input type="checkbox"/> Other: _____                       |

**Comments:**

W Bank to-Bank : 10.5 ft  
 D Bank to-Bank : 1 ft

OHWM W : 4.6 ft  
 OHWM D : 0.2 ft

**Floodplain unit:**

- Low-Flow Channel     Active Floodplain     Low Terrace

GPS point: 33.2530056, -115.9537642

**Characteristics of the floodplain unit:**

Average sediment texture: fine sand  
 Total veg cover: 15 % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: 15 %

**Community successional stage:**

- |  |  |
|--|--|
| <input type="checkbox"/> NA  | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)      |
| <input checked="" type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

**Indicators:**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Mudcracks     | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples                  | <input type="checkbox"/> Surface relief   |
| <input type="checkbox"/> Drift and/or debris      | <input type="checkbox"/> Other: _____     |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____     |
| <input type="checkbox"/> Benches                  | <input type="checkbox"/> Other: _____     |

**Comments:**

**Project ID:** \_\_\_\_\_ **Cross section ID:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

**GPS point:** 23.25290801 -115.9537096

**Characteristics of the floodplain unit:**  
Average sediment texture: fin silt  
Total veg cover: 1 % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: 1 %

Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input checked="" type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

**Comments:**

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

**GPS point:** \_\_\_\_\_

**Characteristics of the floodplain unit:**  
Average sediment texture: \_\_\_\_\_  
Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

**Comments:**

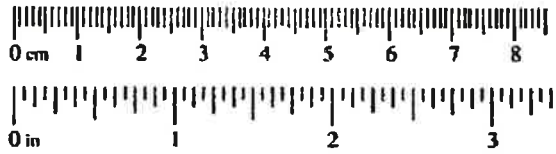
## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Truckhaven <b>Project Number:</b> 21184 <b>Stream:</b> Ephemeral Stream #1 <b>Investigator(s):</b> L. Gorman, E. Olmos	<b>Review Area 1E</b> (Data Point)	<b>Date:</b> <b>Town:</b> <b>Photo begin file#:</b>	<b>Time:</b> <b>State:</b> <b>Photo end file#:</b>
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?		<b>Location Details:</b>  <b>Projection:</b> _____ <b>Datum:</b> _____ <b>Coordinates:</b> _____	
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?			
<b>Potential anthropogenic influences on the channel system:</b> Marmadee berm running N to S comes within approx. 30 ft of channel.			
<b>Brief site description:</b>  			
<b>Checklist of resources (if available):</b>			
<input checked="" type="checkbox"/> Aerial photography Dates: _____		<input type="checkbox"/> Stream gage data Gage number: _____ Period of record: _____	
<input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site		<input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event	
<input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies			
<b>Hydrogeomorphic Floodplain Units</b>			
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b>			
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.			
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.			
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.			
a) Record the floodplain unit and GPS position.			
b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.			
c) Identify any indicators present at the location.			
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.			
5. Identify the OHWM and record the indicators. Record the OHWM position via:			
<input type="checkbox"/> Mapping on aerial photograph		<input checked="" type="checkbox"/> GPS	
<input type="checkbox"/> Digitized on computer		<input type="checkbox"/> Other: _____	



### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	
0.157	4	Pebble	
		Granule	
0.078	2.00	Very coarse sand	Sand
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	Silt
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud





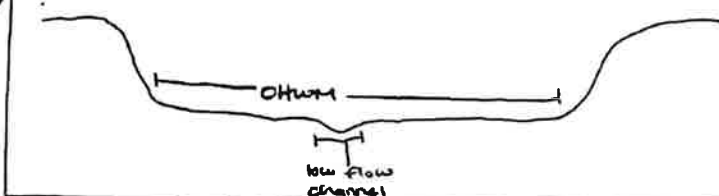
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



**OHWM**

GPS point: 33.2513763, -115.9567904

**Indicators:**

- |   |  |
|---|--|
| <input type="checkbox"/> Change in average sediment texture | <input type="checkbox"/> Break in bank slope                 |
| <input type="checkbox"/> Change in vegetation species       | <input checked="" type="checkbox"/> Other: <u>mudcracks</u>  |
| <input type="checkbox"/> Change in vegetation cover         | <input checked="" type="checkbox"/> Other: <u>knickpoint</u> |

**Comments:**

Flat-bottomed channel spanning full OHWM, with approx. 0.5ft low flow channel cut midway between banks.

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2513763, -115.9567904  
~~33.2513763, -115.9567904~~

**Characteristics of the floodplain unit:**

Average sediment texture: very fine sand

Total veg cover: 100 % Tree: 10 % Shrub: 5 % Herb: 35 %

**Community successional stage:**

- |   |   |
|---|---|
| <input type="checkbox"/> NA                             | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)                 |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input checked="" type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

**Indicators:**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Mudcracks     | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples                  | <input type="checkbox"/> Surface relief   |
| <input type="checkbox"/> Drift and/or debris      | <input type="checkbox"/> Other: _____     |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____     |
| <input type="checkbox"/> Benches                  | <input type="checkbox"/> Other: _____     |

**Comments:**

**Project ID:** \_\_\_\_\_ **Cross section ID:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

**GPS point:** \_\_\_\_\_

**Characteristics of the floodplain unit:**  
 Average sediment texture: \_\_\_\_\_  
 Total veg cover: \_\_\_\_\_% Tree: \_\_\_\_\_% Shrub: \_\_\_\_\_% Herb: \_\_\_\_\_%

**Community successional stage:**  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

**Comments:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

**GPS point:** \_\_\_\_\_

**Characteristics of the floodplain unit:**  
 Average sediment texture: \_\_\_\_\_  
 Total veg cover: \_\_\_\_\_% Tree: \_\_\_\_\_% Shrub: \_\_\_\_\_% Herb: \_\_\_\_\_%

**Community successional stage:**  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

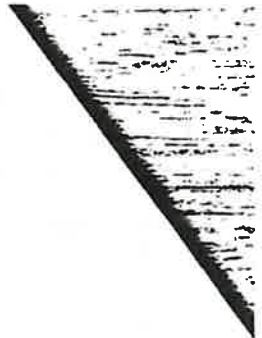
**Indicators:**

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

**Comments:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

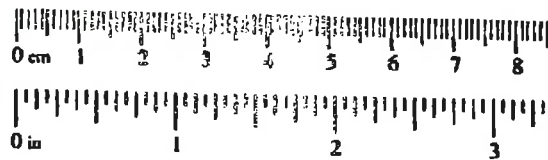
## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Truckee <b>Project Number:</b> 21184 <b>Stream:</b> Review Area 2 (Data Point 9) <b>Investigators:</b> L. Gorman, G. Olmos	<b>Date:</b> <b>Town:</b> <b>Photo begin file#:</b>	<b>Time:</b> <b>State:</b> <b>Photo end file#:</b>				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?	<b>Location Details:</b>  <b>Projection:</b> <span style="float: right;"><b>Datum:</b></span> <b>Coordinates:</b>					
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?						
<b>Potential anthropogenic influences on the channel system:</b>  						
<b>Brief site description:</b> Deep cut (approx 8-10 ft) channel with meandering ephemeral stream.						
<b>Checklist of resources (if available):</b>						
<input checked="" type="checkbox"/> Aerial photography Dates: <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event					
<b>Hydrogeomorphic Floodplain Units</b>						
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b>						
<ol style="list-style-type: none"> <li>1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.</li> <li>2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.</li> <li>3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.             <ol style="list-style-type: none"> <li>a) Record the floodplain unit and GPS position.</li> <li>b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.</li> <li>c) Identify any indicators present at the location.</li> </ol> </li> <li>4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.</li> <li>5. Identify the OHWM and record the indicators. Record the OHWM position via:             <table style="margin-left: 20px; border: none;"> <tr> <td><input type="checkbox"/> Mapping on aerial photograph</td> <td><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> </li> </ol>			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					



### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.58	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2	0.0088	Medium sand	
1/4	0.005	Fine sand	
1/8	0.0025	Very fine sand	
1/16	0.0012	Coarse silt	Silt
1/32	0.00081	Medium silt	
1/64	0.00031	Fine silt	
1/128	0.00015	Very fine silt	
	0.0039	Clay	Mud



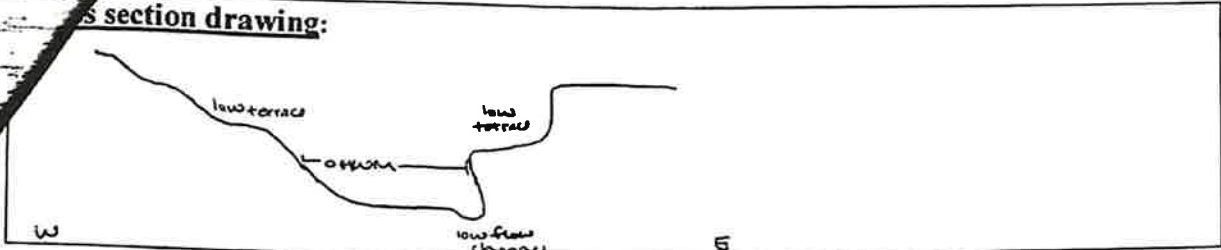
ID:

Cross section ID:

Date:

Time:

Cross section drawing:



**OHWM**

GPS point: 33.2510937, -115.9599739

**Indicators:**

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: ripples
- Other: \_\_\_\_\_

Comments:

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2510937, -115.9599739

**Characteristics of the floodplain unit:**

Average sediment texture: very fine sand  
Total veg cover: 0 % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

**Community successional stage:**

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

**Indicators:**

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: knickpoints
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

Comments:

**Project ID:** \_\_\_\_\_ **Cross section ID:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_  
**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

**GPS point:** 33.2511021, -116.9699663

**Characteristics of the floodplain unit:**

Average sediment texture: silt with pebbles in matrix

Total veg cover: 1 % Tree:     % Shrub: 1 % Herb:     %

**Community successional stage:**

- NA  Mid (herbaceous, shrubs, saplings) one shrub  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

- Mudcracks  Soil development  
 Ripples  Surface relief  
 Drift and/or debris  Other: exposed root hairs  
 Presence of bed and bank  Other: \_\_\_\_\_  
 Benches  Other: \_\_\_\_\_

**Comments:**

sharp change in slope on E bank. Gradual slope on W bank

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

**GPS point:** \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

**Community successional stage:**

- NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

- Mudcracks  Soil development  
 Ripples  Surface relief  
 Drift and/or debris  Other: \_\_\_\_\_  
 Presence of bed and bank  Other: \_\_\_\_\_  
 Benches  Other: \_\_\_\_\_

**Comments:**

## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Truckhaven <b>Project Number:</b> Z1124 <b>Stream:</b> Drainage 2 (Data Point 10)		<b>Date:</b> 2/27/22 <b>Town:</b> <b>Photo begin file#:</b>		<b>Time:</b> <b>State:</b> <b>Photo end file#:</b>	
<b>Investigator(s):</b> L. Garner, E. Olmos					
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?			<b>Location Details:</b>  <b>Projection:</b> _____ <b>Datum:</b> _____ <b>Coordinates:</b> _____		
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?					
<b>Potential anthropogenic influences on the channel system:</b> off-roading road, which could be potential access road, is approx 25 ft from data collection point					
<b>Brief site description:</b> wide wash with gravel deposits and shoals along bank					
<b>Checklist of resources (if available):</b>					
<input checked="" type="checkbox"/> Aerial photography Dates: _____		<input type="checkbox"/> Stream gage data Gage number: _____ Period of record: _____			
<input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site		<input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event			
<input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies					
<b>Hydrogeomorphic Floodplain Units</b>					
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b>					
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.					
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.					
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.					
a) Record the floodplain unit and GPS position.					
b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.					
c) Identify any indicators present at the location.					
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.					
5. Identify the OHWM and record the indicators. Record the OHWM position via:					
<input type="checkbox"/> Mapping on aerial photograph		<input checked="" type="checkbox"/> GPS			
<input type="checkbox"/> Digitized on computer		<input type="checkbox"/> Other: _____			



### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.58	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud





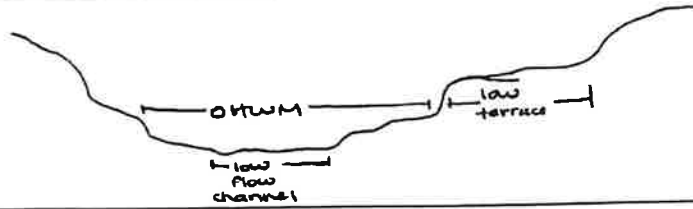
Project ID:

Cross section ID:

Date:

Time:

**Cross section drawing:**



**OHWM**

GPS point: 33.2455773, -115.9599155

**Indicators:**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species                  | <input checked="" type="checkbox"/> Other: <u>bench</u> |
| <input type="checkbox"/> Change in vegetation cover                    | <input type="checkbox"/> Other: _____                   |

**Comments:**

At and above OHWM there are deposits of gravel and pebble. Primarily on west side of floodplain.

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2455773, -115.9599155

**Characteristics of the floodplain unit:**

Average sediment texture: very fine sand  
Total veg cover: 1 % Tree:     % Shrub: 1 % Herb:     %

**Community successional stage:**

- |  |  |
|--|--|
| <input type="checkbox"/> NA  | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)      |
| <input checked="" type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

**Indicators:**

- |  |   |
|--|---|
| <input type="checkbox"/> Mudcracks                           | <input type="checkbox"/> Soil development   |
| <input checked="" type="checkbox"/> Ripples                  | <input type="checkbox"/> Surface relief   |
| <input type="checkbox"/> Drift and/or debris                 | <input checked="" type="checkbox"/> Other: <u>exposed root hairs</u>              |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input checked="" type="checkbox"/> Other: <u>change in particle distribution</u> |
| <input checked="" type="checkbox"/> Benches                  | <input type="checkbox"/> Other: _____   |

**Comments:**

One small goldenbush growing in middle of flood plain

Project ID: \_\_\_\_\_ Cross section ID: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2455747, -115.9599046

**Characteristics of the floodplain unit:**  
Average sediment texture: fine sand with pebble and gravel deposits  
Total veg cover: 15 % Tree:      % Shrub: 15 % Herb:      %  
Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**  
 Mudcracks  Soil development  
 Ripples  Surface relief  
 Drift and/or debris  Other: \_\_\_\_\_  
 Presence of bed and bank  Other: \_\_\_\_\_  
 Benches  Other: \_\_\_\_\_

**Comments:**  
East bank higher shrub density

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**  
Average sediment texture: \_\_\_\_\_  
Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %  
Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**  
 Mudcracks  Soil development  
 Ripples  Surface relief  
 Drift and/or debris  Other: \_\_\_\_\_  
 Presence of bed and bank  Other: \_\_\_\_\_  
 Benches  Other: \_\_\_\_\_

**Comments:**

## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Trockhaven <b>Project Number:</b> 21184 <b>Stream:</b> Review Area 1C (Data Point 14) <b>Investigator(s):</b> L. Gorman, E. Olmos	<b>Date:</b> 4/27/22 <b>Town:</b> <b>Photo begin file#:</b>	<b>Time:</b> <b>State:</b> CA <b>Photo end file#:</b>
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?  Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b>  <b>Projection:</b> _____ <b>Datum:</b> _____ <b>Coordinates:</b> _____	
<b>Potential anthropogenic influences on the channel system:</b> Terminus of off-roading trail ends approx. 160 ft E of this point. Trail ends there since channel system is about 6 ft deep.		
<b>Brief site description:</b> Deep cut wash with stands of tamarisk growing on low terrace. Evidence of first flowing waters as plants in floodplain bent over facing E.		
<b>Checklist of resources (if available):</b> <input checked="" type="checkbox"/> Aerial photography Dates: _____ <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies		
<input type="checkbox"/> Stream gage data Gage number: _____ Period of record: _____ <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<b>Hydrogeomorphic Floodplain Units</b>		
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via:		
<input type="checkbox"/> Mapping on aerial photograph <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Digitized on computer <input type="checkbox"/> Other:		

### Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class
10.08	256	Boulder
2.56	64	Cobble
0.157	4	Pebble
0.079	2.00	Granule
0.039	1.00	Very coarse sand
0.020	0.50	Coarse sand
1/2	0.0098	Medium sand
1/4	0.005	Fine sand
1/8	0.0025	Very fine sand
1/16	0.0012	Coarse silt
1/32	0.00061	Medium silt
1/64	0.00031	Fine silt
1/128	0.00015	Very fine silt
	0.0039	Clay



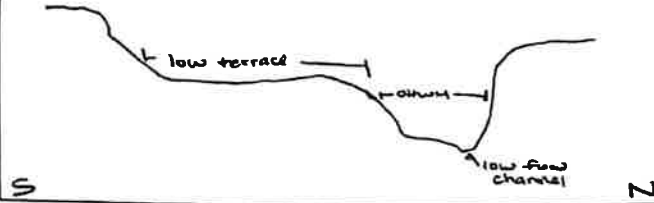
Project ID:

Cross section ID:

Date:

Time:

**Cross section drawing:**



**OHWM**

GPS point: 33.2497989, -115.9621283

**Indicators:**

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: mudcracks
- Other: \_\_\_\_\_

**Comments:**

noticeable cut midway between bed of wash and low terrace.

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2497989, -115.9621283

**Characteristics of the floodplain unit:**

Average sediment texture: very fine sand  
Total veg cover: 15 % Tree:     % Shrub: 5 % Herb: 10 %

**Community successional stage:**

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

**Indicators:**

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: Exposed roots
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**Comments:**

Project ID:

Cross section ID:

Date:

Time:

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: 33.2497857, -115.9621475

**Characteristics of the floodplain unit:**  
 Average sediment texture: coarse silt  
 Total veg cover: 13 % Tree: 10 % Shrub: 3 % Herb: 5 %  
 Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input checked="" type="checkbox"/> Surface relief
<input checked="" type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

**Comments:**  
 wide low terrace relative to active floodplain

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**  
 Average sediment texture: \_\_\_\_\_  
 Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %  
 Community successional stage:  
 NA  Mid (herbaceous, shrubs, saplings)  
 Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

**Comments:**

**APPENDIX C – SITE PHOTOGRAPHS**



**Appendix C – Site Photographs**



**Photo 1:** Drainage 2 ordinary high water mark (OHWM) devoid of vegetation at RA 2, where Drainage 2 passes past the western edge of the Impact Area for proposed well pad 18-32. Stream banks contain scattered shrub species including creosote (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*). Fine sands are present in the streambed. Photo taken facing north on April 26, 2022.



**Photo 2:** Drainage 1 where a bed, bank, and channel begin to develop within the Impact Area of proposed well pad 18-32 (at RA 1D) after being partially diverted by Drainage 2 at RA 2. Photo taken facing east along the southern edge of the access road Impact Area on April 26, 2022.



**Appendix C – Site Photographs**



**Photo 3:** Drainage 1 as it passes through the Impact Area for a proposed access road (at RA 1E). Sonoran Creosote Scrub with scattered tamarisk (*Tamarix* sp.) is present in the floodplain. Photo taken facing northeast on April 27, 2022.



**Photo 4:** View upstream towards Drainages 1 (along berm; RA 3A) and Drainage 3 (lined with tamarisk; RA 1E). Photo taken facing southwest on April 27, 2022.

**Appendix C – Site Photographs**



**Photo 5:** Downstream view of continuation of Drainage 3 as it approaches RA 3B, west of proposed well pad 47-32. Photo taken facing northeast on April 26, 2022.



**Photo 6:** Drainage 1 and Drainage 3 as they combine and flow northwards and pass west of the Impact Area for a proposed well pad 47-32 at RA 3B. Photo taken facing south on April 26, 2022.

**Appendix C – Site Photographs**



**Photo 7:** Drainage 1 within the northwestern corner of the Impact Area for proposed well pad 47-32, just after it curves east and away from Drainage 3, at RA 1F. Photo taken facing southeast on April 26, 2022.



**Photo 8:** Drainage 4 southwest of proposed well pad 18-32. This drainage connects to Drainages 1 and 2. Photo taken facing northeast on April 27, 2022.

**APPENDIX D – JURISDICTIONAL DELINEATION FORM**



**APPROVED JURISDICTIONAL DETERMINATION FORM**  
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Los Angeles District

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: California County/parish/borough: Riverside City: Salton City  
Center coordinates of site (lat/long in degree decimal format): Lat. 33.2522371° **N**, Long. -115.9564525° **E**.  
Universal Transverse Mercator: 11S 597207.74 mE, 3679735.96 mN

Name of nearest waterbody: Salton Sea

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Salton Sea

Name of watershed or Hydrologic Unit Code (HUC): 12

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

Office (Desk) Determination. Date: April 20, 2022

Field Determination. Date(s): April 26-27, 2022

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: .

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: 424 linear feet: 7 width (ft) and/or 0.032 acres.

Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual**

Elevation of established OHWM (if known): Between -101 and -124 above mean sea level.

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: .

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

### SECTION III: CWA ANALYSIS

#### A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

##### 1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

##### 2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

#### B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

##### 1. Characteristics of non-TNWs that flow directly or indirectly into TNW

###### (i) General Area Conditions:

Watershed size: 15-62 square miles

Drainage area: Pick List

Average annual rainfall: 3.2 inches

Average annual snowfall: 0.0 inches

###### (ii) Physical Characteristics:

###### (a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through 3 tributaries before entering TNW.

Project waters are 2-5 river miles from TNW.

Project waters are Pick List river miles from RPW.

Project waters are 2-5 aerial (straight) miles from TNW.

Project waters are Pick List aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: N/A.

Identify flow route to TNW<sup>5</sup>: Two drainages (Drainages 1 and 4) connect to an NW1 mapped flowline that feeds into Surprise Wash, which in turn connects to Tule Wash, and then continues east and feeds into the Salton Sea. Two

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

drainages (Drainages 2 and 3) connect to Arroyo Salada to the north, which in turn feeds into the Salton Sea to the east. Therefore, ephemeral drainages in the Survey Area directly contribute to the Salton Sea, a TNW.  
Tributary stream order, if known:

(b) **General Tributary Characteristics (check all that apply):**

Tributary is:  Natural  
 Artificial (man-made). Explain: Man-made ditch.  
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: 20 feet  
 Average depth: 2 feet  
 Average side slopes: 2:1.

Primary tributary substrate composition (check all that apply):

Silts  Sands  Concrete  
 Cobbles  Gravel  Muck  
 Bedrock  Vegetation. Type/% cover:  
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: highly eroding.

Presence of run/riffle/pool complexes. Explain: N/A.

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): 5-10 %

(c) **Flow:**

Tributary provides for: **Ephemeral flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime: Not continuous.

Other information on duration and volume:

Surface flow is: **Overland sheetflow**. Characteristics:

Subsurface flow: **Yes**. Explain findings: As Drainage 1 flows northeast, it is partially diverted by a man-made ditch (Drainage 2). As a result, a portion of the water flows north along the ditch towards Arroyo Salada and flows past the Impact Area (Review Area 2), while the rest of the water flows sub-surface in its NWI-mapped path northeast, and then percolates back to the surface with a defined bed and bank as it crosses a proposed access road location (Review Area 1E). A portion of water from Drainage 4 also flows subsurface into Drainage 1, and re-surfaces within the eastern edge of proposed well pad 18-32 (Review Area 1D) as it flows eastward along the NWI-mapped drainage. Drainage 1 is diverted by a second ditch (Drainage 3) as the two drainages pass through the impact area of a proposed access road (Review Areas 1E and 3A). This second ditch diverts Drainage 1 past the western edge of proposed well pad 47-32 (Review Area 3B), north of its historic path, to a new pathway through the northwest corner of proposed well pad 47-32 (Review Area 1F). Drainages 1 and 4 (NWI/NHD-mapped drainages) connect to Surprise Wash, then Tule Wash, and ultimately the Salton Sea. Drainage 2 (NHD-Mapped Canal/Ditch) and Drainage 3 (not mapped by NWI or NHD) connect to Arroyo Salada to the north, which in turn feeds into the Salton Sea to the east.

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (check all indicators that apply):  
 clear, natural line impressed on the bank  the presence of litter and debris  
 changes in the character of soil  destruction of terrestrial vegetation  
 shelving  the presence of wrack line  
 vegetation matted down, bent, or absent  sediment sorting  
 leaf litter disturbed or washed away  scour  
 sediment deposition  multiple observed or predicted flow events  
 water staining  abrupt change in plant community  
 other (list):  
 Discontinuous OHWM.<sup>7</sup> Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by:  Mean High Water Mark indicated by:

<sup>6</sup>A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

<sup>7</sup>Ibid.

- oil or scum line along shore objects
- fine shell or debris deposits (foreshore)
- physical markings/characteristics
- tidal gauges
- other (list):
- survey to available datum;
- physical markings;
- vegetation lines/changes in vegetation types.

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: No water present during field investigation.

Identify specific pollutants, if known:



(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) **General Wetland Characteristics:**

Properties:

- Wetland size:        acres
- Wetland type. Explain:
- Wetland quality. Explain:
- Project wetlands cross or serve as state boundaries. Explain:

(b) **General Flow Relationship with Non-TNW:**

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

- Dye (or other) test performed:

(c) **Wetland Adjacency Determination with Non-TNW:**

- Directly abutting
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) **Proximity (Relationship) to TNW**

Project wetlands are **Pick List** river miles from TNW.  
Project waters are **Pick List** aerial (straight) miles from TNW.  
Flow is from: **Pick List**.  
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:  
Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**  
Approximately (        ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
------------------------------	------------------------	------------------------------	------------------------

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: Two drainages (Drainages 1 and 4) connect to an NWI mapped flowline that feeds into Surprise Wash, which in turn connects to Tule Wash, and then continues east and feeds into the Salton Sea. Two drainages (Drainages 2 and 3) connect to Arroyo Salada to the north, which in turn feeds into the Salton Sea to the east. Therefore, ephemeral drainages in the Survey Area directly contribute to the Salton Sea, a TNW.
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

### D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

- Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters:        linear feet        width (ft).  
 Other non-wetland waters:        acres.  
Identify type(s) of waters:

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: 424 linear feet 7 width (ft).  
 Other non-wetland waters: 0.032 acres.  
Identify type(s) of waters: **ephemeral drainage.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.  
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:  
  
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area:        acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area:        acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area:        acres.

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or  
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or  
 Demonstrate that water is isolated with a nexus to commerce (see E below).

**E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):<sup>10</sup>**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.

<sup>8</sup>See Footnote # 3.

<sup>9</sup> To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup> Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain:
- Other factors. Explain:

**Identify water body and summarize rationale supporting determination:**

**Provide estimates for jurisdictional waters in the review area (check all that apply):**

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.  
Identify type(s) of waters:
- Wetlands: acres.

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
  - Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
  - Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Refer to Figures 1 and 2.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
  - Corps navigable waters' study:
  - U.S. Geological Survey Hydrologic Atlas:
    - USGS NHD data.
    - USGS 8 and 12 digit HUC maps.
  - U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 Truckhaven and Kane Spring NW.
  - USDA Natural Resources Conservation Service Soil Survey. Citation:
  - National wetlands inventory map(s). Cite name:USFWS; refer to Figure 3.
  - State/Local wetland inventory map(s):
  - FEMA/FIRM maps:Refer to Figure 6.
  - 100-year Floodplain Elevation is:Between -70 and -124 above mean sea level (National Geodectic Vertical Datum of 1929)
  - Photographs:  Aerial (Name & Date):Refer to Figure 7, National Agriculture Program (NAIP) imagery, 2020).  
or  Other (Name & Date):Refer to Appendix C, April 26-27, 2022.
- Previous determination(s). File no. and date of response letter:
- Applicable/supporting case law:
- Applicable/supporting scientific literature:
- Other information (please specify):

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

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**D**

**Assembly Bill 52 and  
Senate Bill 18  
Native American  
Consultation**

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**D-1**

**Assembly Bill 52  
Native American  
Consultation**

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Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0960

FORT YUMA - QUECHAN INDIAN TRIBE

Jordan D. Joaquin., President  
P.O. Box 1899  
Yuma AZ 85366

**RE: Notice of Opportunity to Consult under AB-52 for the Ormat-Truckhaven Geothermal Exploration Well Project (ZC#22-0004) (GPA#22-0003); APNs 017-970-011; 017-010-057; and 017-340-003**

Dear Mr. Joaquin,

The County of Imperial (County) has initiated environmental review under the California Environmental Quality Act (CEQA) for the Ormat-Truckhaven Geothermal Exploration Well Zone Change and General Plan Amendment Project within the "Truckhaven Geothermal Leasing Area" west of the Salton Sea and south-southwest of Salton City in western Imperial County, California (**Figure 1 Regional Location Map**). The six (6) exploratory wells included in the Ormat-Truckhaven Geothermal Exploratory Well Project are located within the USGS Geologic Survey 7.5' quadrangle for Kane Springs NW within APNs 017-970-011; 017-010-057; and 017-340-003 and are also located within the West Shores/Salton City Urban Area Plan (2000), west of State Route 86 and east of the northwest boundary of the Ocotillo Wells State Vehicular Recreation Area (SVRA) (**Figure 2 Project Area**).

Omi 5, LLC (the Applicant) is proposing to drill, test and operate six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area. On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 which authorized the geothermal exploration wells. The County sought your input and provided an opportunity for consultation under AB-52 on this 2019 Project via a letter dated August 7, 2019.

Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement prior to construction. For this reason the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18 32 and #47-32 (APN 017 010 057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and;
- A "General Plan Amendment" to add parcels APN 017 010 057 and APN 017 970 011 to Imperial County General Plan Geothermal Overlay Zone.

The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

In accordance with Assembly Bill 52 (AB 52) and Section 21080.3.1(d) of the California Public Resources Code (PRC), we are responding to your request to be notified of projects in our jurisdiction that will be reviewed under CEQA. Your name was provided to us as the point of contact for your tribe. We are hereby notifying you of an opportunity to consult with the County regarding the potential for this project to impact Tribal Cultural Resources, as defined in Section 21074 of the PRC. The purposes of tribal consultation under AB 52 are to determine, as part of the CEQA review process, whether or not Tribal Cultural Resources are present within the project area, and if so, whether or not those resources will be significantly impacted by the project. If Tribal Cultural Resources may be significantly impacted, then consultation will also help to determine the most appropriate way to avoid or mitigate those impacts.

In accordance with Section 21080.3.1(d) of the PRC, you have 30 days from the receipt of this letter to either request or decline consultation in writing for this project. Please send your written response before **January 31, 2024** to David Black, Planner IV or by email to [ICPDSCommentLetters@co.imperial.ca.us](mailto:ICPDSCommentLetters@co.imperial.ca.us) if the County does not receive a response within 30 days, the County will proceed with the project. Thank you and we look forward to your response.

Sincerely,

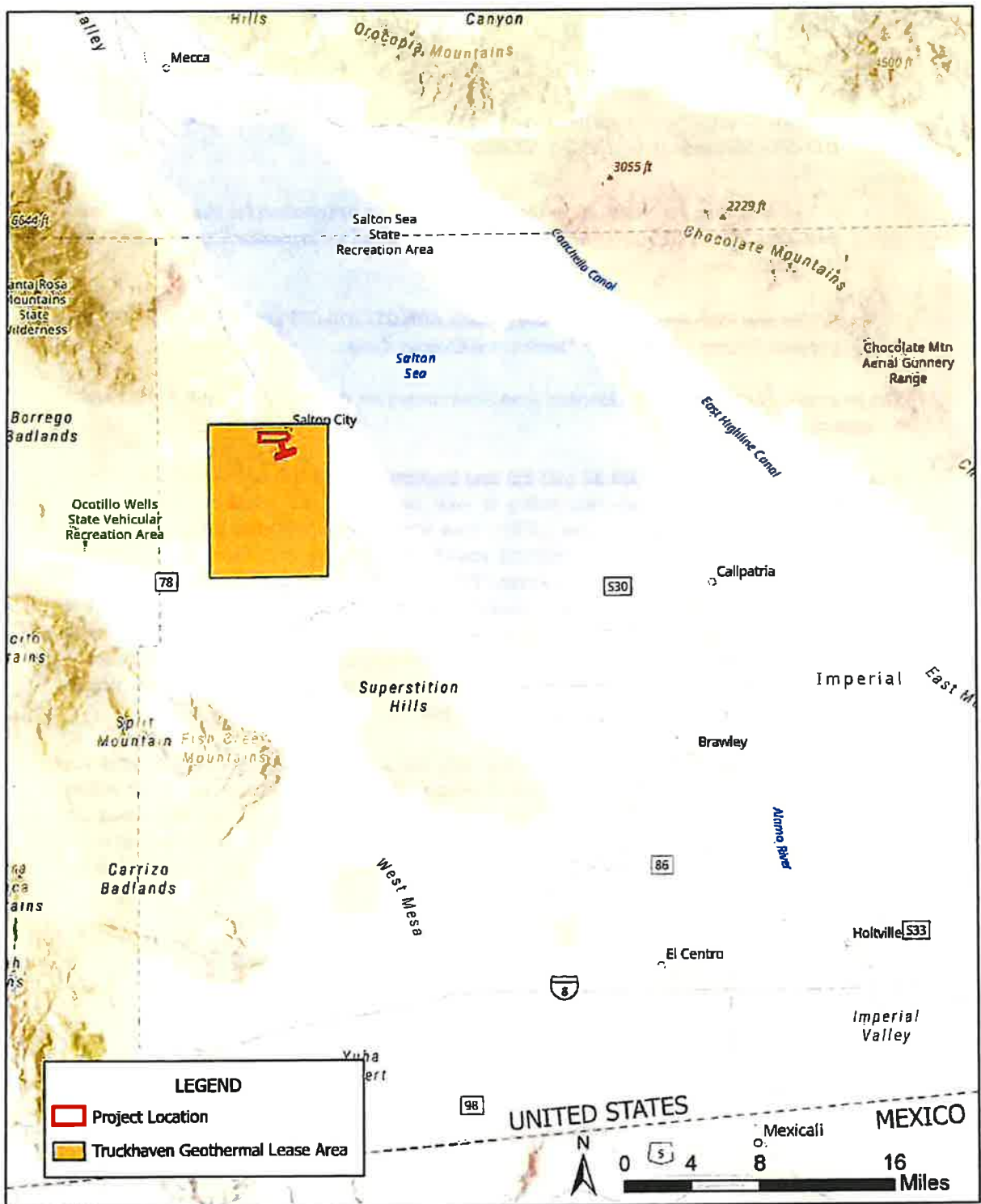
JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachments:           Figure 1 - Regional Location Map  
                                  Figure 2 – Project Area Map  
                                  Figure 3 - Proposed Zone Change,  
                                  Figure 4 - Proposed General Plan Amendment

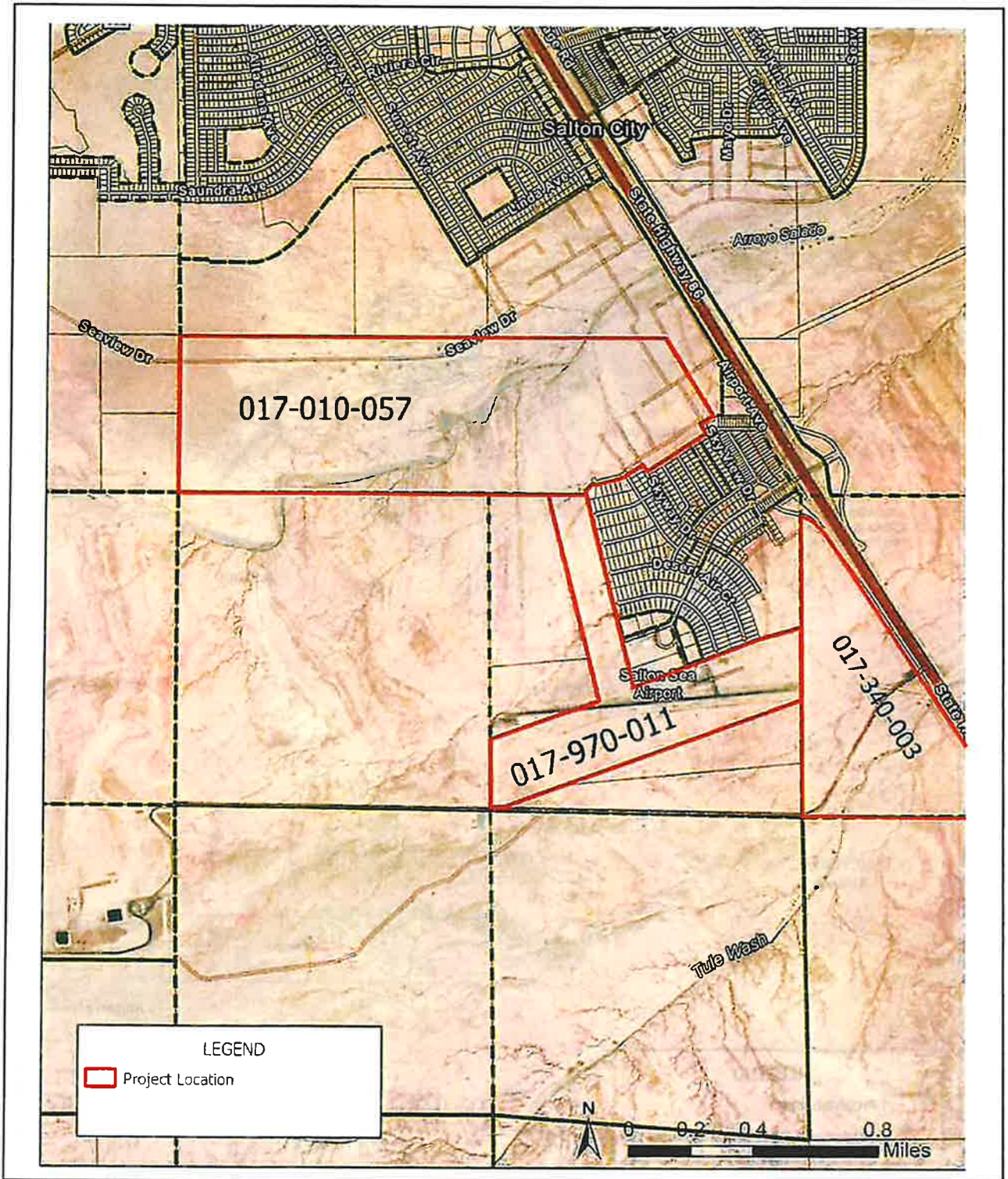
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**EEC ORIGINAL PKG**



Regional Location  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 1



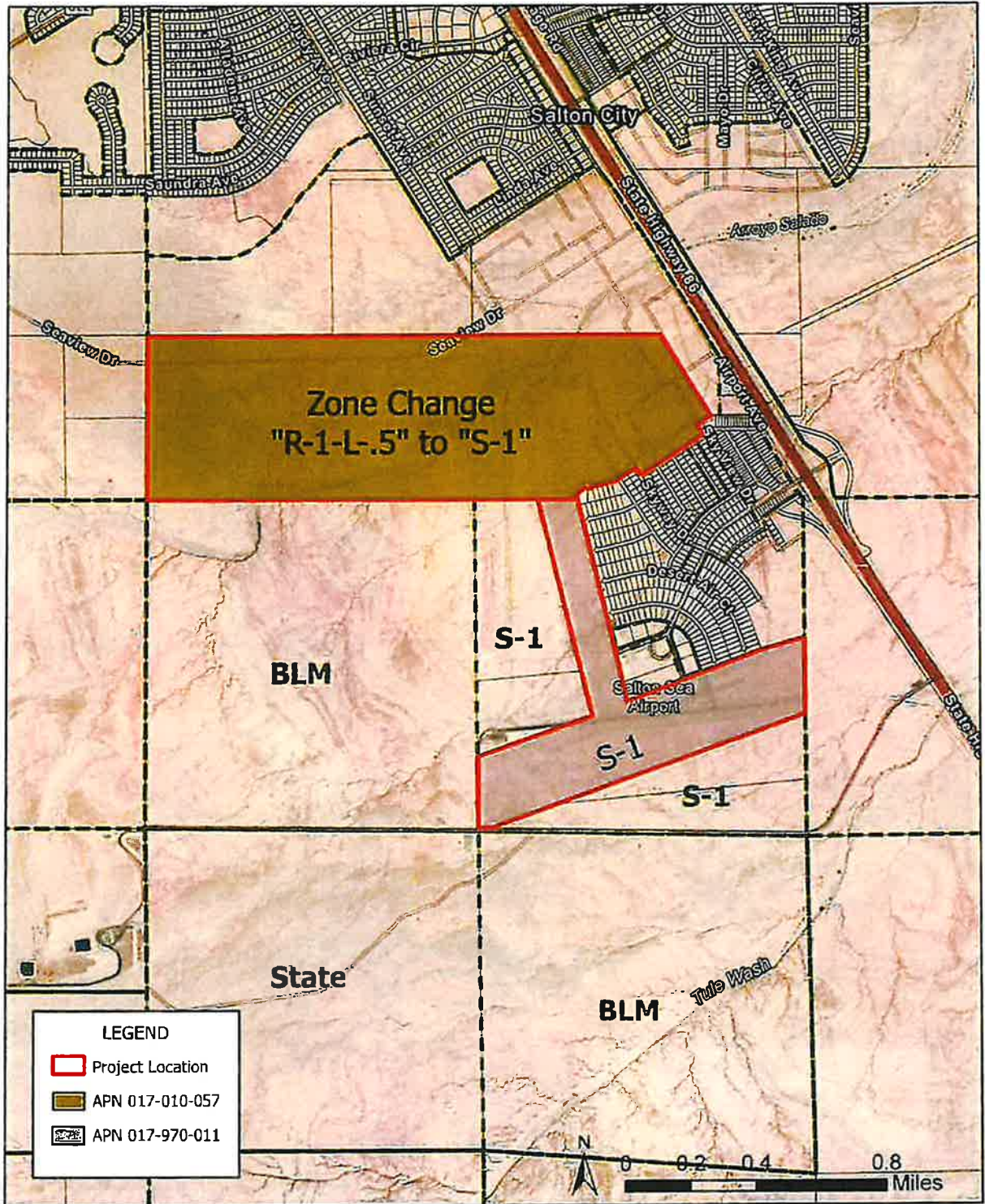


Source: ESRI, 2023



Project Area  
Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
Figure 2

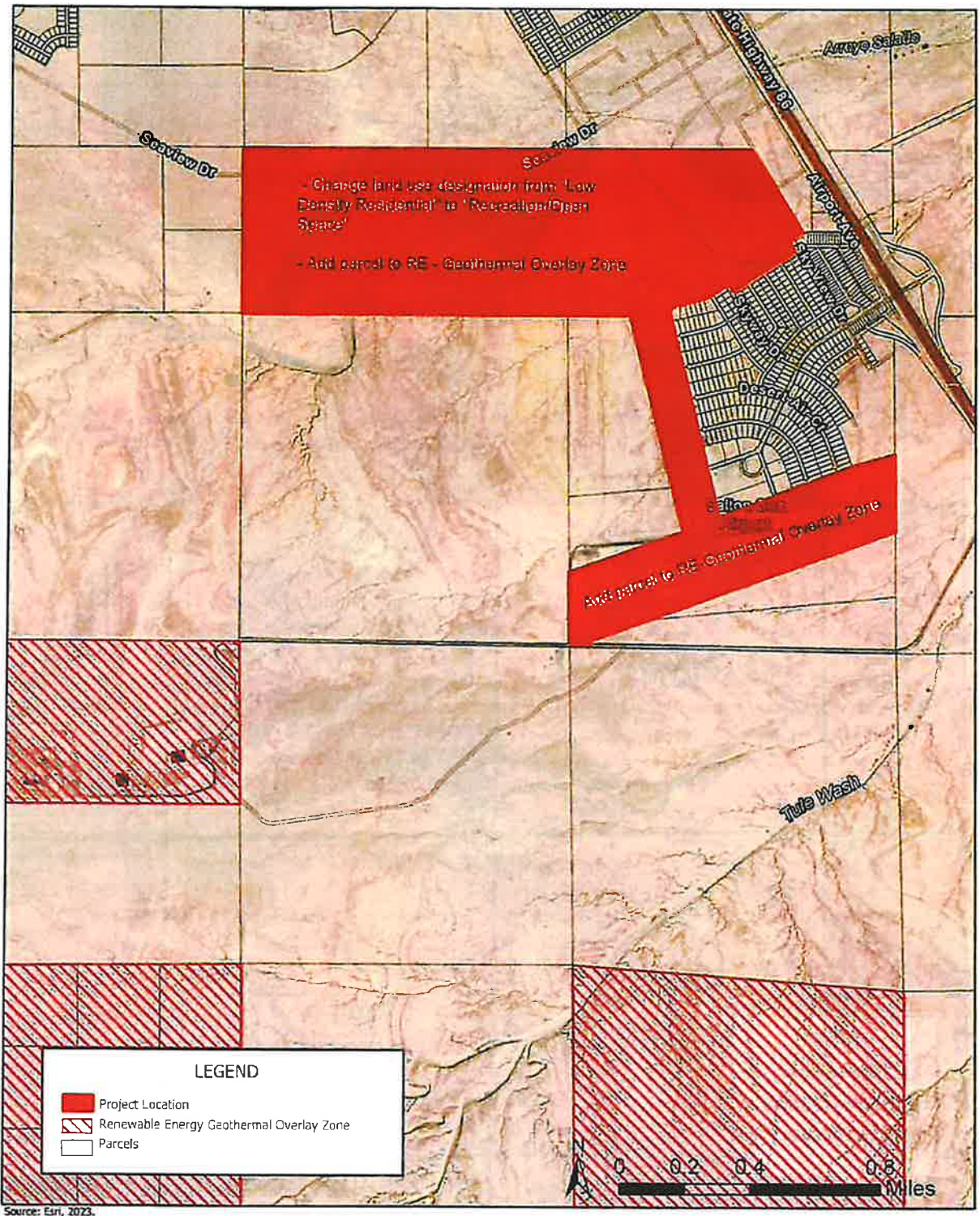
EEC ORIGINAL PKG



Source: Esri, 2023.



Proposed Zone Change  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 3



Proposed General Plan Amendment  
Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
Figure 4





## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

Jim Minnick  
DIRECTOR

CERTIFIED MAIL #7018 1830 0000 2357 0953

FORT YUMA - QUECHAN INDIAN TRIBE  
H. Jill McCormick, M.A. Quechan Historic Preservation Officer  
P.O. Box 1899  
Yuma AZ 85366

**RE: Notice of Opportunity to Consult under AB-52 for the Ormat-Truckhaven Geothermal Exploration Well Project (ZC#22-0004) (GPA#22-0003); APNs 017-970-011; 017-010-057; and 017-340-003**

Dear Ms. McCormick,

The County of Imperial (County) has initiated environmental review under the California Environmental Quality Act (CEQA) for the Ormat-Truckhaven Geothermal Exploration Well Zone Change and General Plan Amendment Project within the "Truckhaven Geothermal Leasing Area" west of the Salton Sea and south-southwest of Salton City in western Imperial County, California (Figure 1 Regional Location Map). The six (6) exploratory wells included in the Ormat-Truckhaven Geothermal Exploratory Well Project are located within the USGS Geologic Survey 7.5' quadrangle for Kane Springs NW within APNs 017-970-011; 017-010-057; and 017-340-003 and are also located within the West Shores/Salton City Urban Area Plan (2000), west of State Route 86 and east of the northwest boundary of the Ocotillo Wells State Vehicular Recreation Area (SVRA) (Figure 2 Project Area).

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Sincerely,

**JIM MINNICK, DIRECTOR**  
Imperial County Planning & Development Services

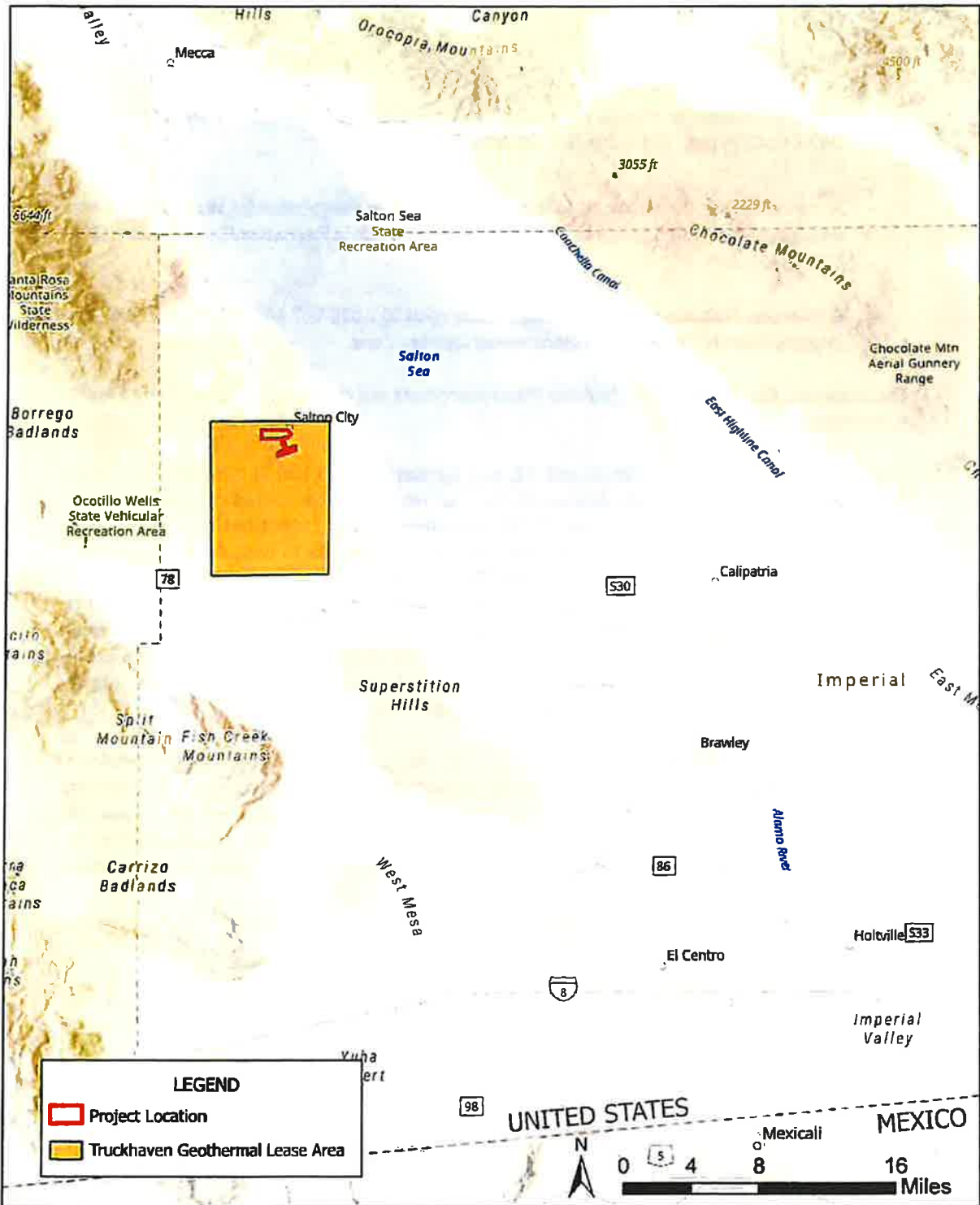
BY:

  
David Black, Planner IV

Attachments:            Figure 1 - Regional Location Map  
                                 Figure 2 – Project Area Map  
                                 Figure 3 - Proposed Zone Change,  
                                 Figure 4 - Proposed General Plan Amendment

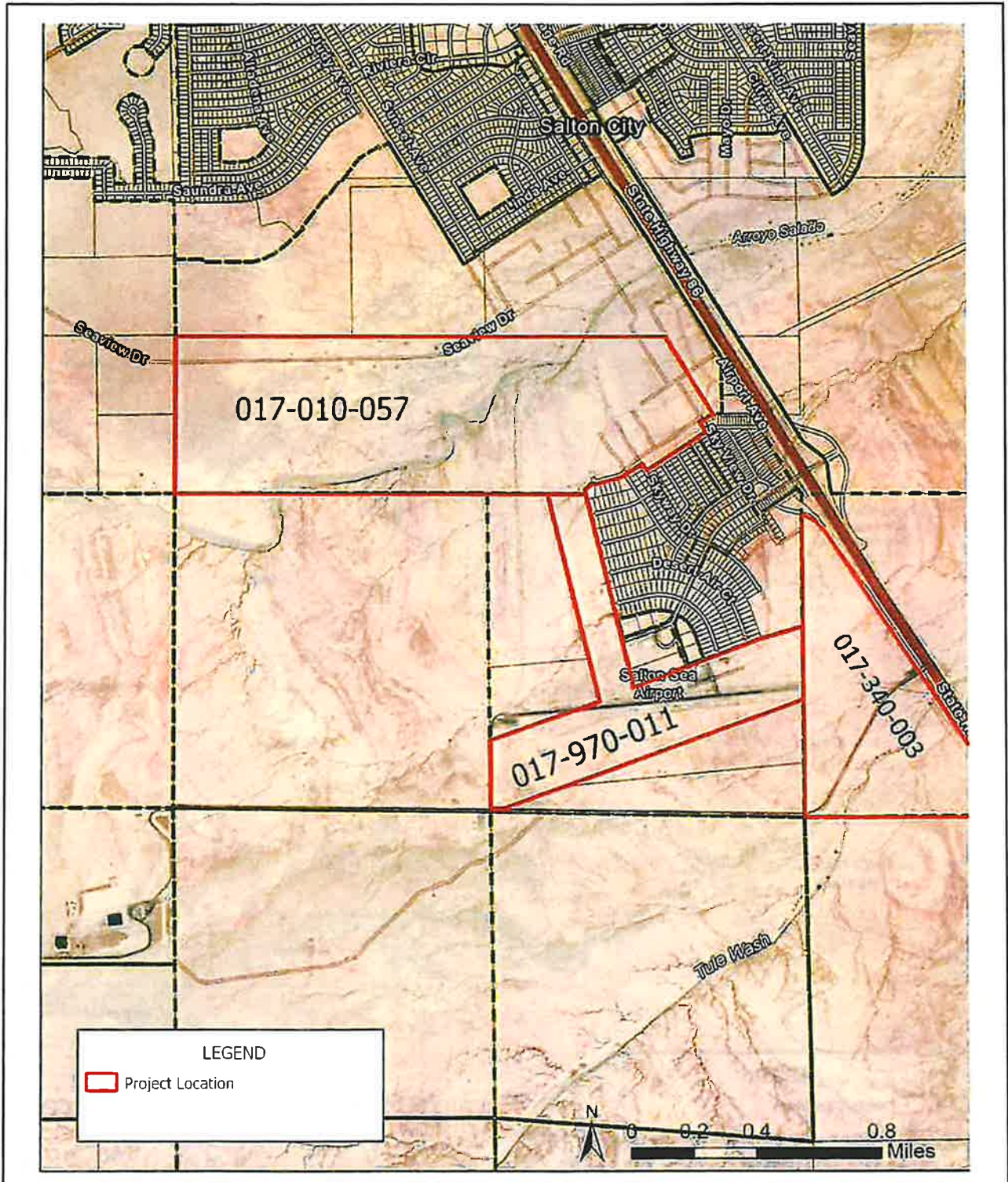
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**EEC ORIGINAL PKG**



Regional Location  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 1

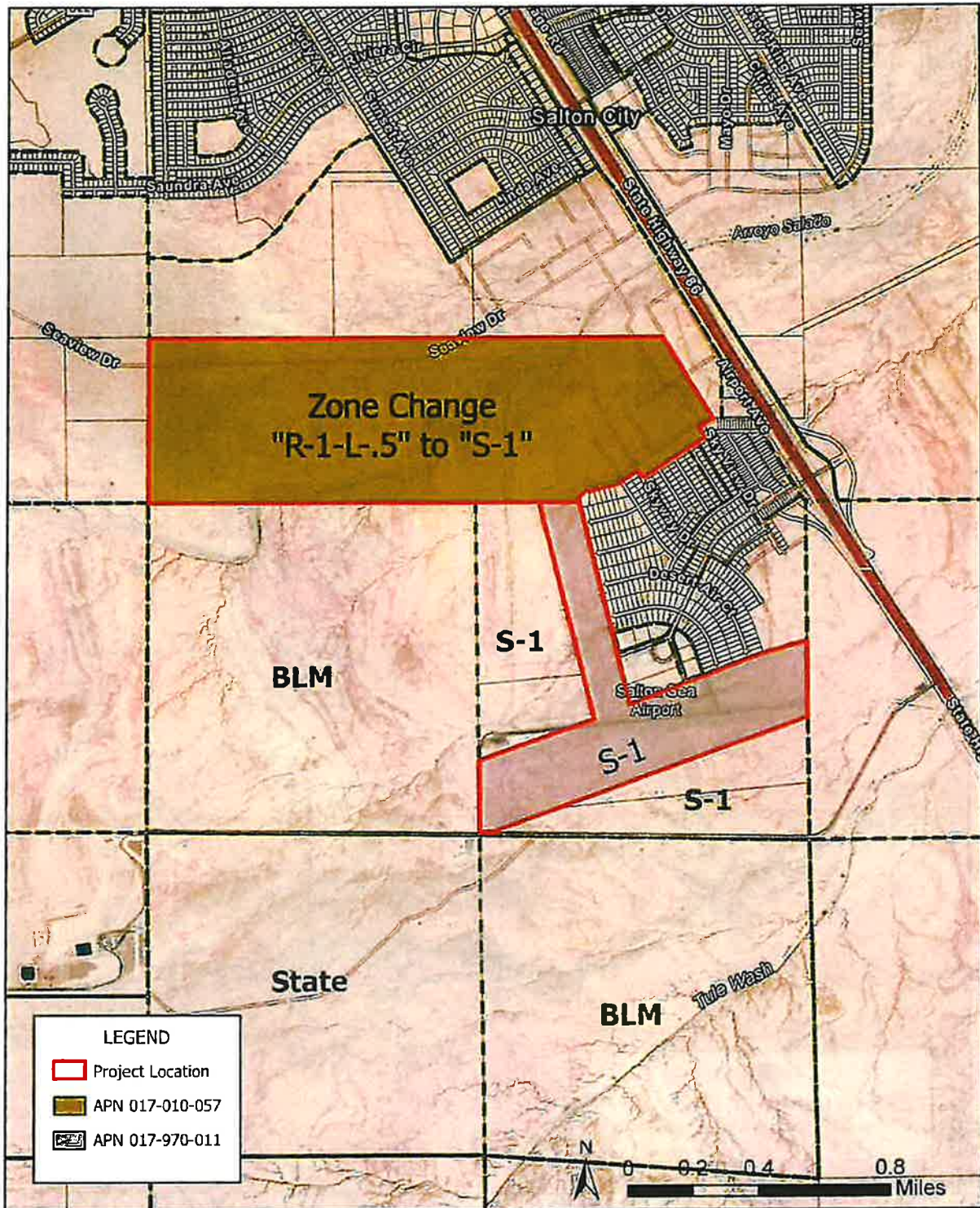




Source: ESRI, 2023



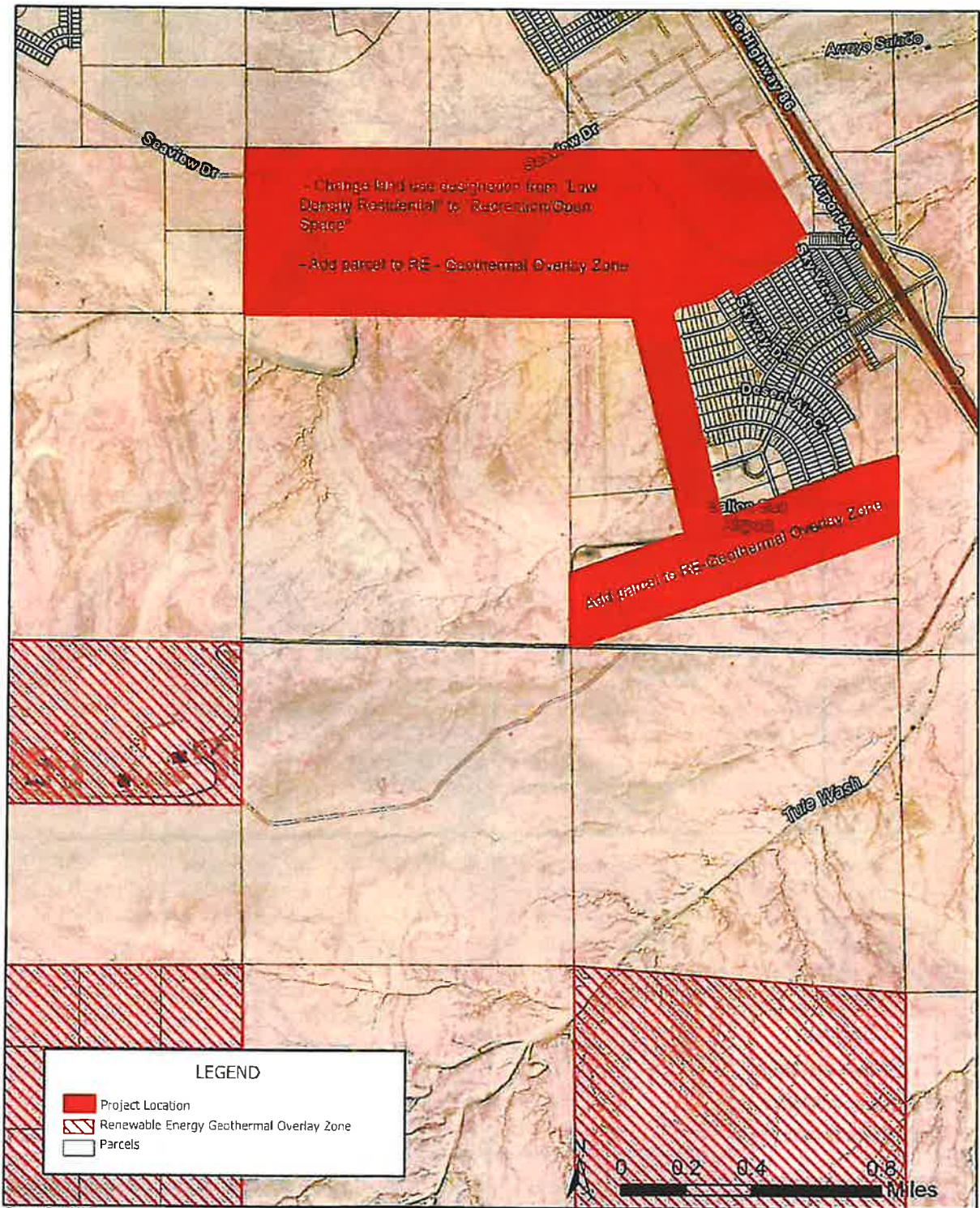
Project Area  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
 Figure 2



Source: Esri, 2023.



Proposed Zone Change  
Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
Figure 3



Proposed General Plan Amendment  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 4





## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

Jim Minnick  
DIRECTOR

CERTIFIED MAIL #7018 1830 0000 2357 0984

**TORRES-MARTINEZ DESERT CAHUILLA INDIANS**

Joseph Mirelez, Vice Chairperson  
P.O. Box 1160  
Thermal, CA 92274

**RE: Notice of Opportunity to Consult under AB-52 for the Ormat-Truckhaven Geothermal Exploration Well Project (ZC#22-0004) (GPA#22-0003); APNs 017-970-011; 017-010-057; and 017-340-003**

Dear Mr. Mirelez,

The County of Imperial (County) has initiated environmental review under the California Environmental Quality Act (CEQA) for the Ormat-Truckhaven Geothermal Exploration Well Zone Change and General Plan Amendment Project within the "Truckhaven Geothermal Leasing Area" west of the Salton Sea and south-southwest of Salton City in western Imperial County, California (Figure 1 Regional Location Map). The six (6) exploratory wells included in the Ormat-Truckhaven Geothermal Exploratory Well Project are located within the USGS Geologic Survey 7.5' quadrangle for Kane Springs NW within APNs 017-970-011; 017-010-057; and 017-340-003 and are also located within the West Shores/Salton City Urban Area Plan (2000), west of State Route 86 and east of the northwest boundary of the Ocotillo Wells State Vehicular Recreation Area (SVRA) (Figure 2 Project Area).

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In accordance with Assembly Bill 52 (AB 52) and Section 21080.3.1(d) of the California Public Resources Code (PRC), we are responding to your request to be notified of projects in our jurisdiction that will be reviewed under CEQA. Your name was provided to us as the point of contact for your tribe. We are hereby notifying you of an opportunity to consult with the County regarding the potential for this project to impact Tribal Cultural Resources, as defined in Section 21074 of the PRC. The purposes of tribal consultation under AB 52 are to determine, as part of the CEQA review process, whether or not Tribal Cultural Resources are present within the project area, and if so, whether or not those resources will be significantly impacted by the project. If Tribal Cultural Resources may be significantly impacted, then consultation will also help to determine the most appropriate way to avoid or mitigate those impacts.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

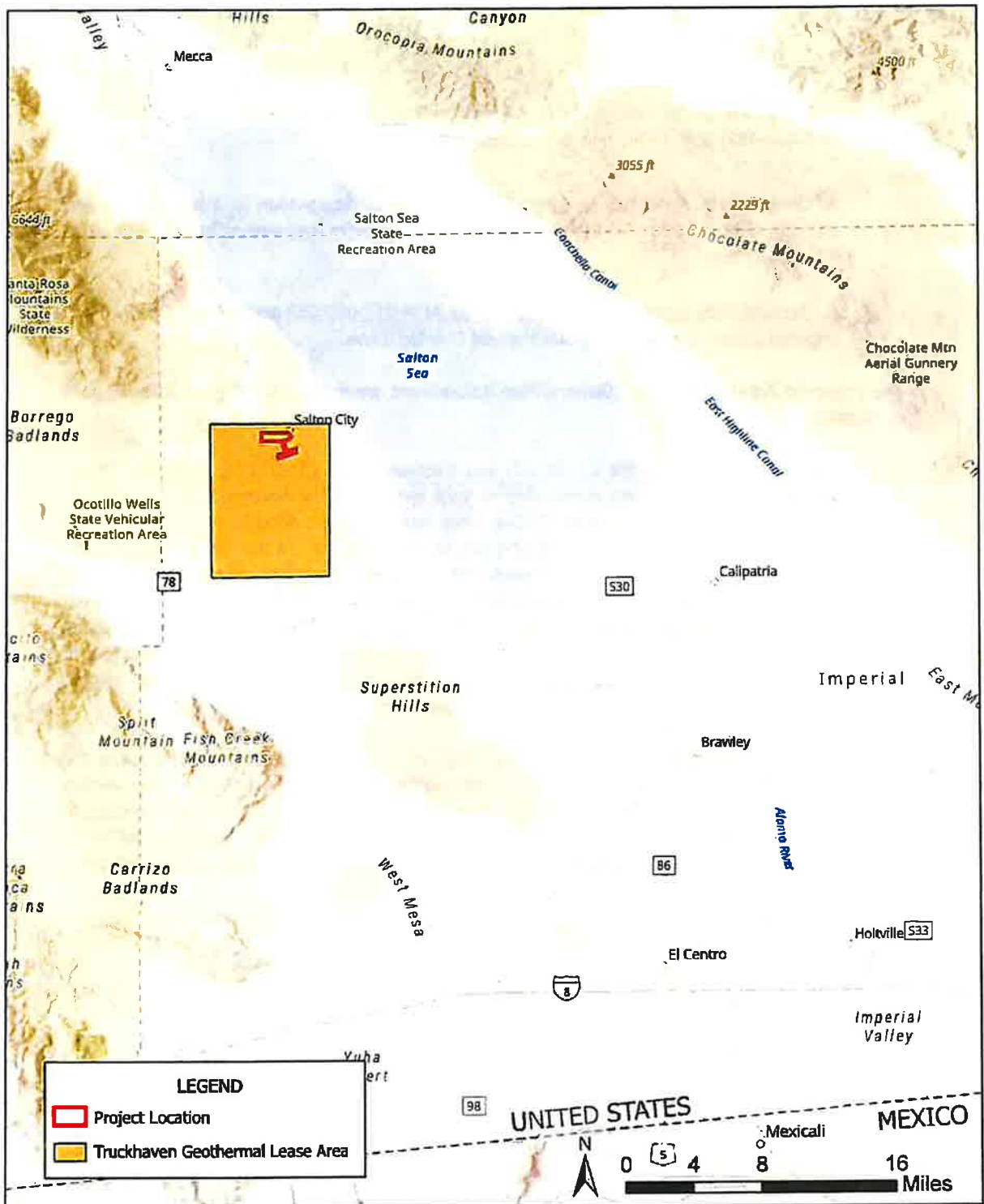
BY:   
David Black, Planner IV

Attachments:           Figure 1 - Regional Location Map  
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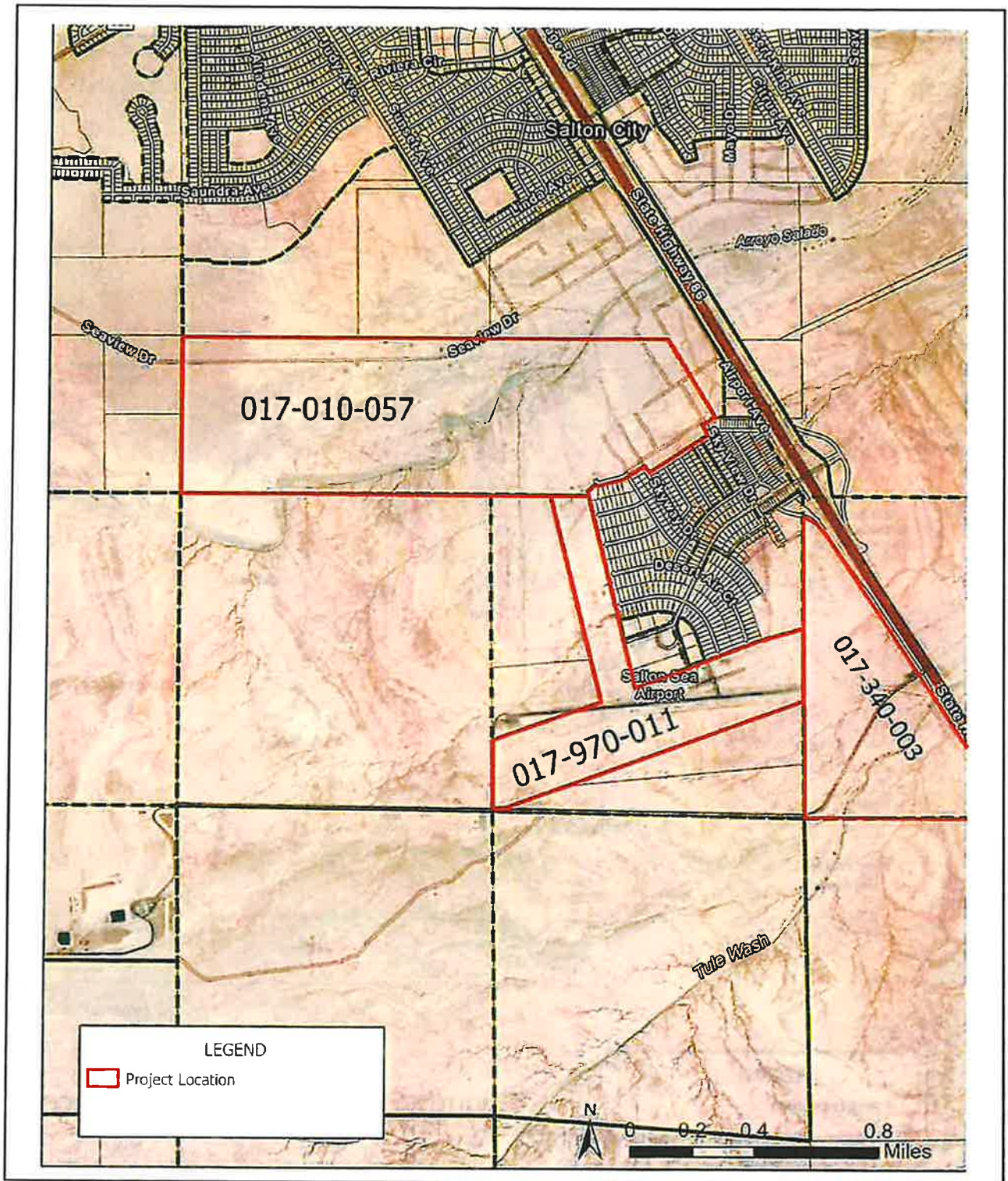
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**Regional Location**  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 1



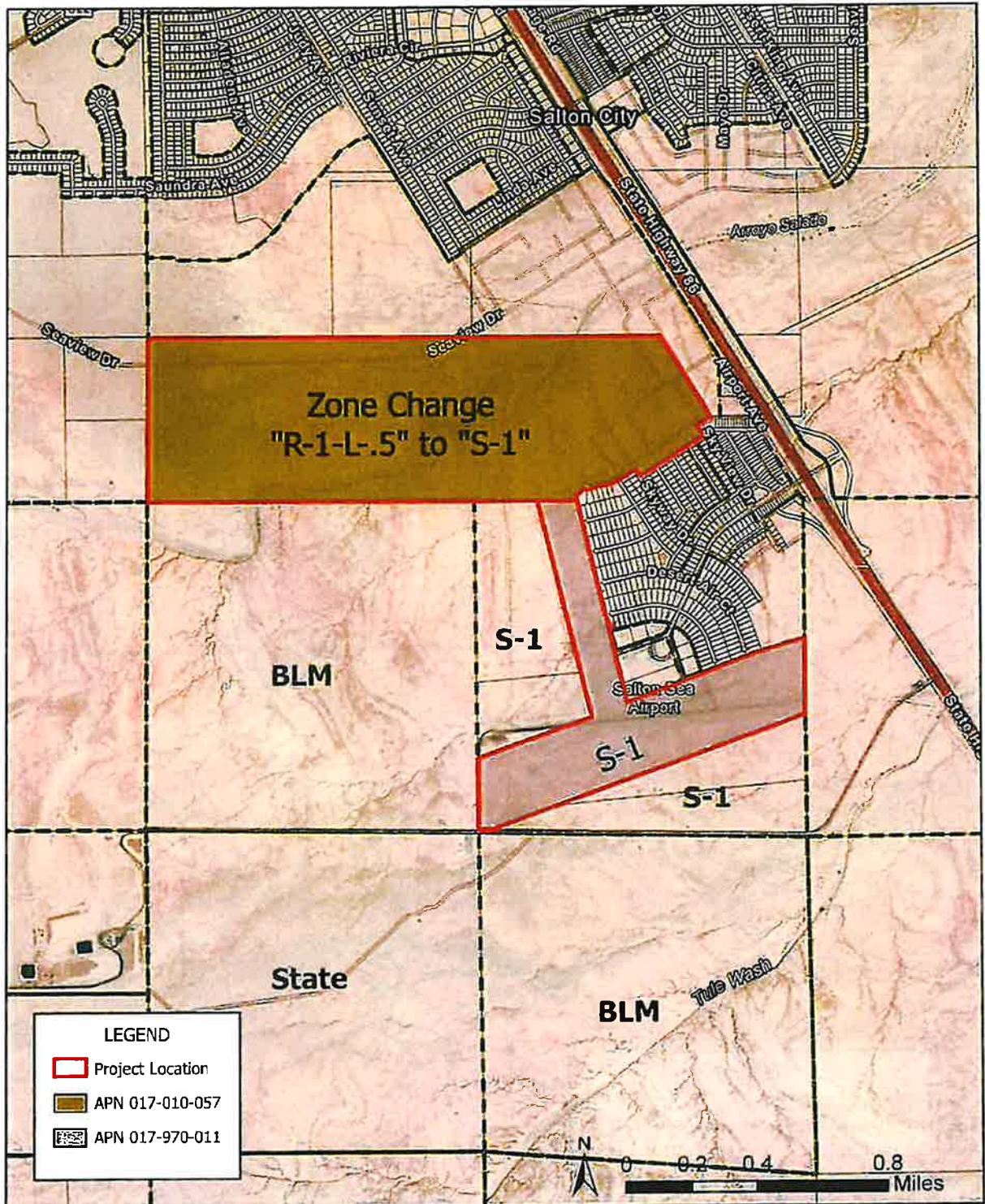


Source: ESRI, 2023



Project Area  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
 Figure 2

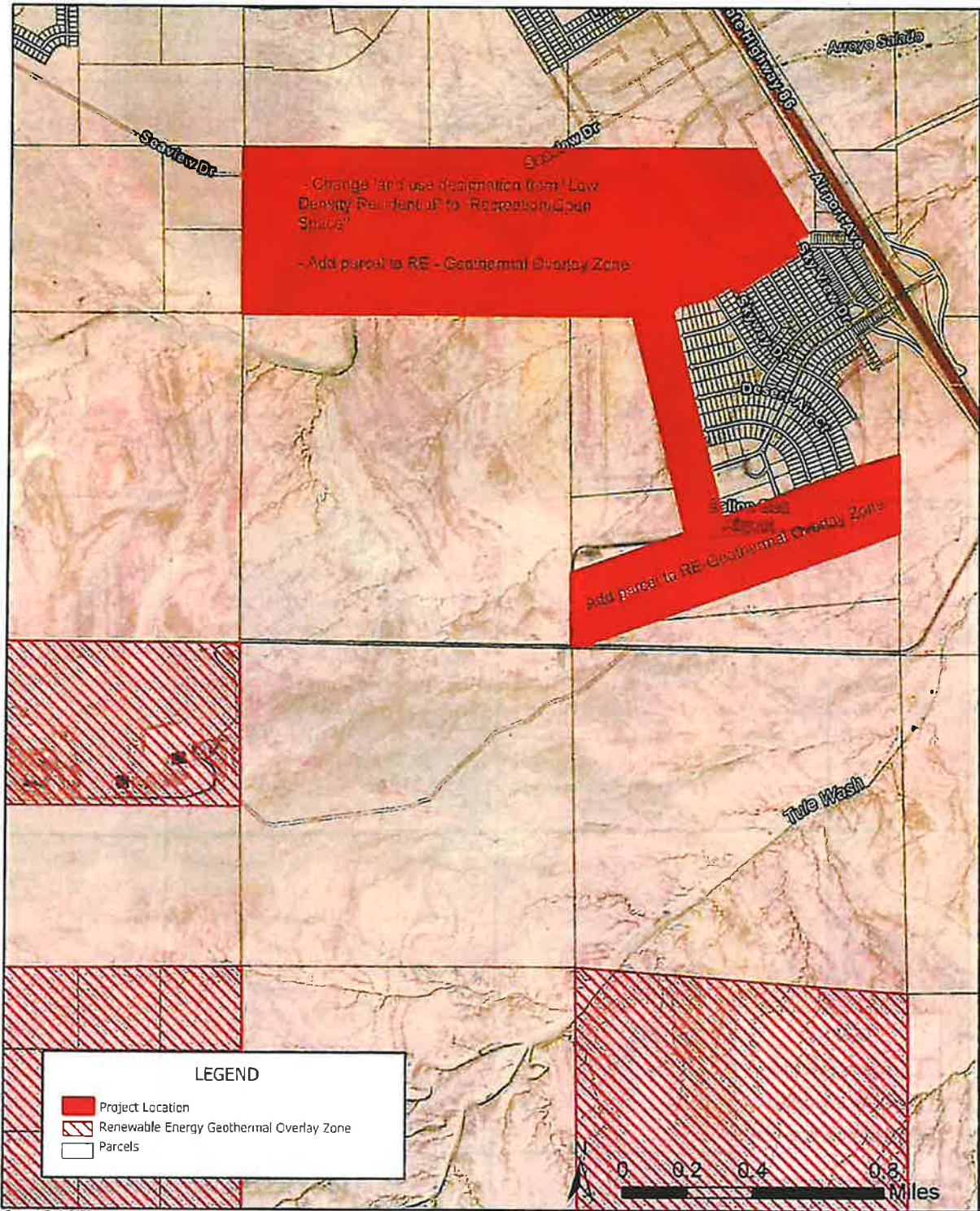
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Source: Esri, 2023.



Proposed Zone Change  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 3



Proposed General Plan Amendment  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 4



Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0977

TORRES-MARTINEZ DESERT CAHUILLA INDIANS  
Thomas Torte, Chairperson  
P.O. Box 1160  
Thermal, CA 92274

**RE: Notice of Opportunity to Consult under AB-52 for the Ormat-Truckhaven Geothermal Exploration Well Project (ZC#22-0004) (GPA#22-0003); APNs 017-970-011; 017-010-057; and 017-340-003**

Dear Mr. Torte,

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The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

In accordance with Assembly Bill 52 (AB 52) and Section 21080.3.1(d) of the California Public Resources Code (PRC), we are responding to your request to be notified of projects in our jurisdiction that will be reviewed under CEQA. Your name was provided to us as the point of contact for your tribe. We are hereby notifying you of an opportunity to consult with the County regarding the potential for this project to impact Tribal Cultural Resources, as defined in Section 21074 of the PRC. The purposes of tribal consultation under AB 52 are to determine, as part of the CEQA review process, whether or not Tribal Cultural Resources are present within the project area, and if so, whether or not those resources will be significantly impacted by the project. If Tribal Cultural Resources may be significantly impacted, then consultation will also help to determine the most appropriate way to avoid or mitigate those impacts.

In accordance with Section 21080.3.1(d) of the PRC, you have 30 days from the receipt of this letter to either request or decline consultation in writing for this project. Please send your written response before **January 31, 2024** to David Black, Planner IV or by email to [ICPDSCommentLetters@co.imperial.ca.us](mailto:ICPDSCommentLetters@co.imperial.ca.us) if the County does not receive a response within 30 days, the County will proceed with the project. Thank you and we look forward to your response.

Sincerely,

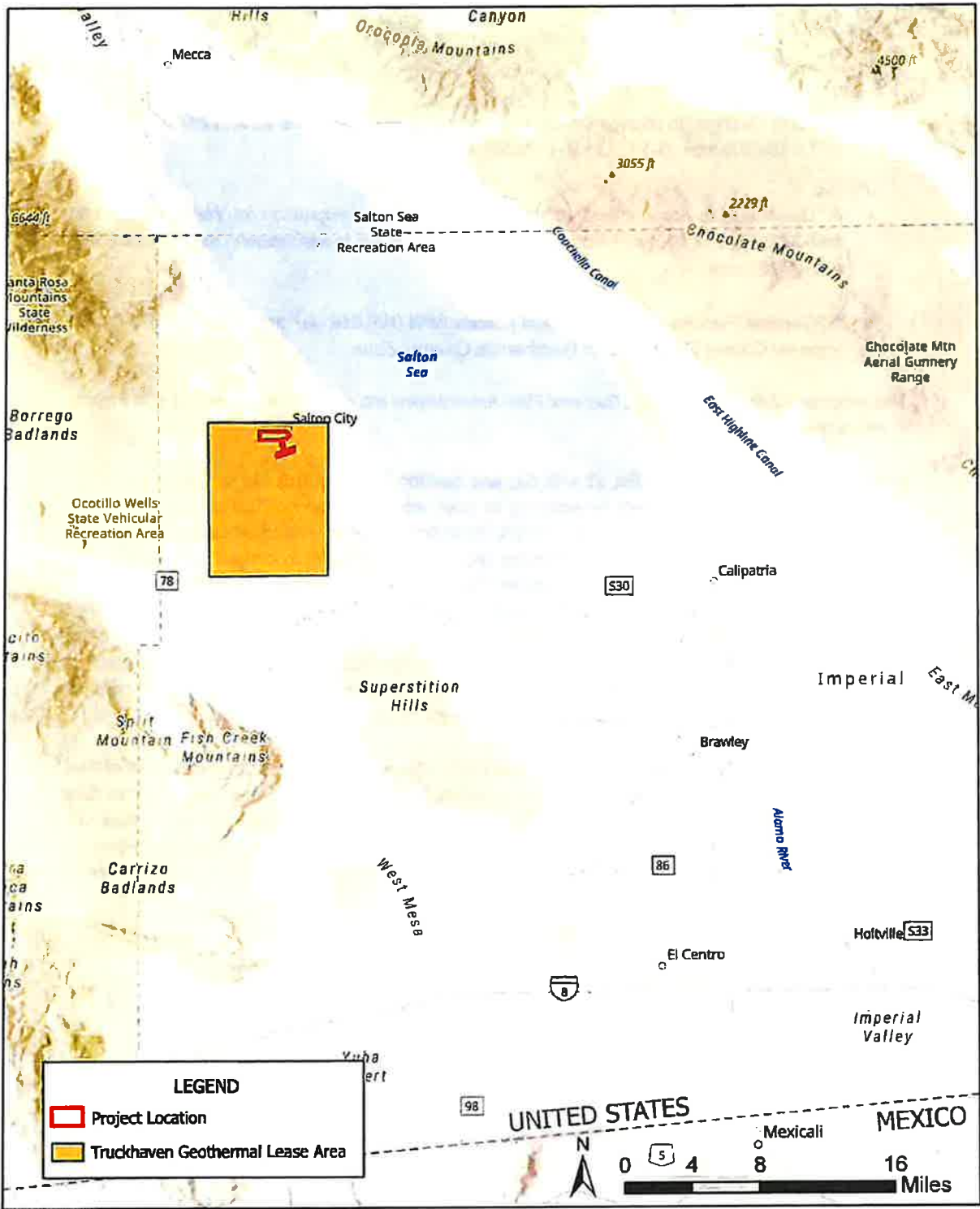
JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachments:           Figure 1 - Regional Location Map  
                                  Figure 2 - Project Area Map  
                                  Figure 3 - Proposed Zone Change,  
                                  Figure 4 - Proposed General Plan Amendment

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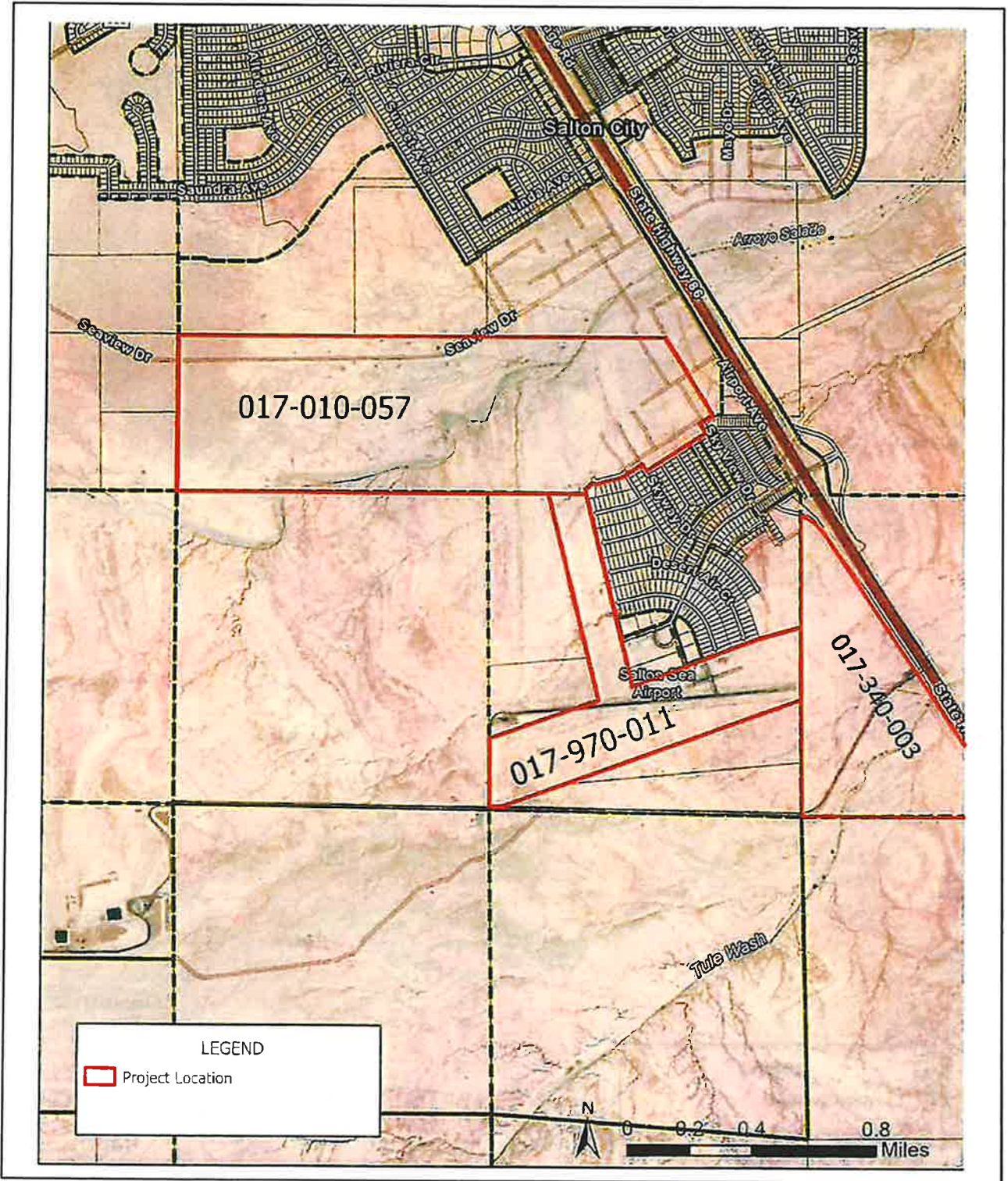


Source: Esri, 2023.



**Regional Location**  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 1

**EEC ORIGINAL PKG**



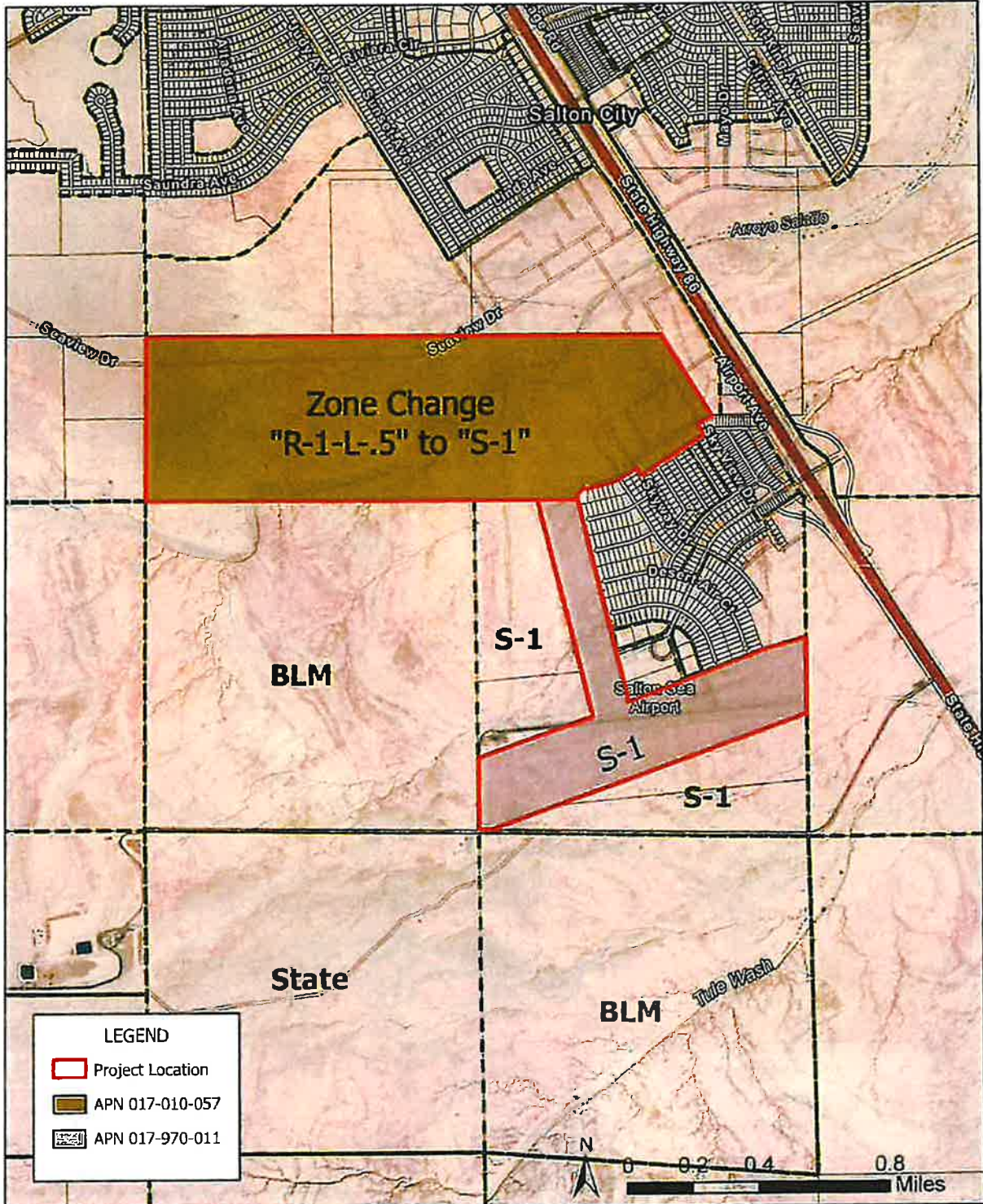
Source: ESRI, 2023



Project Area  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
 Figure 2

EEC ORIGINAL PKG

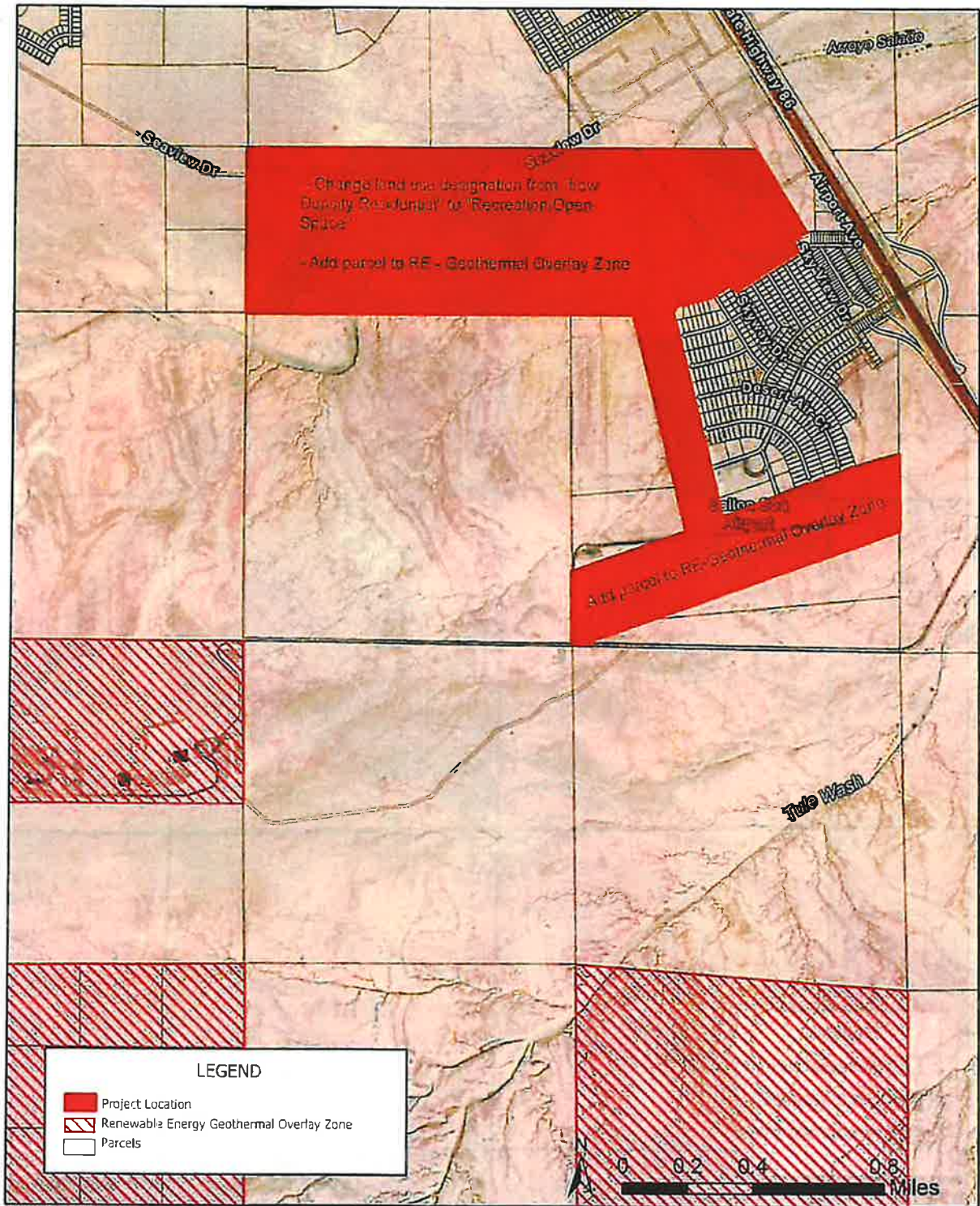




Source: Esri, 2023.



Proposed Zone Change  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 3



Proposed General Plan Amendment  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 4

**D-2**

**Senate Bill 18  
Native American  
Consultation**

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**D-2**

**Senate Bill 18  
Native American  
Consultation**

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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 0991

Agua Caliente Band of Cahuilla Indians  
Patricia Garcia  
5401 Dinah Shore Drive  
Palm Springs, CA

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Garcia,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
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Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **April 2<sup>nd</sup>, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

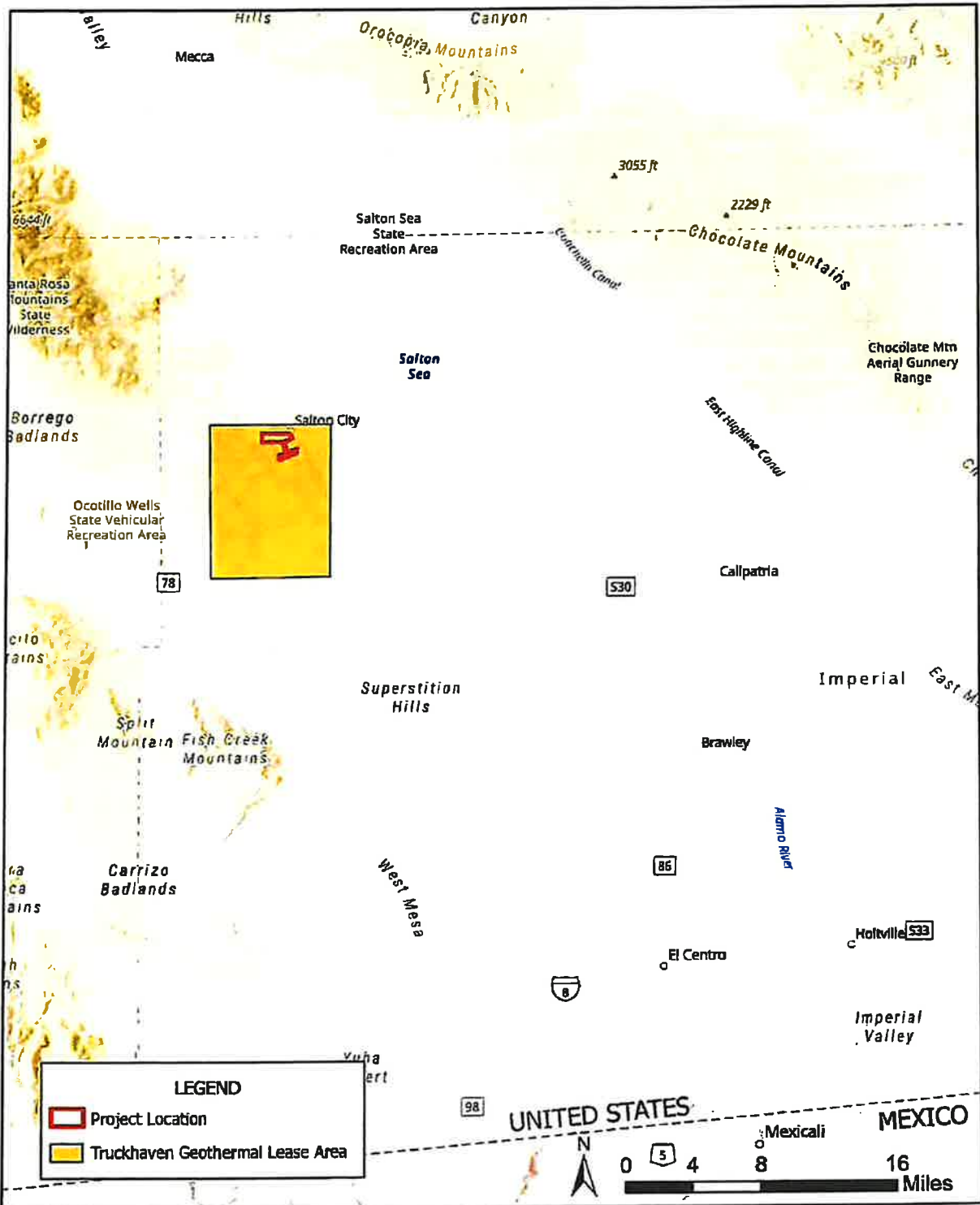
Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
DB\LAIS\AIUsers\APN0171010057\GPA22-0003\SB18 & AB 52\SB-18 Letter DRAFT.docx

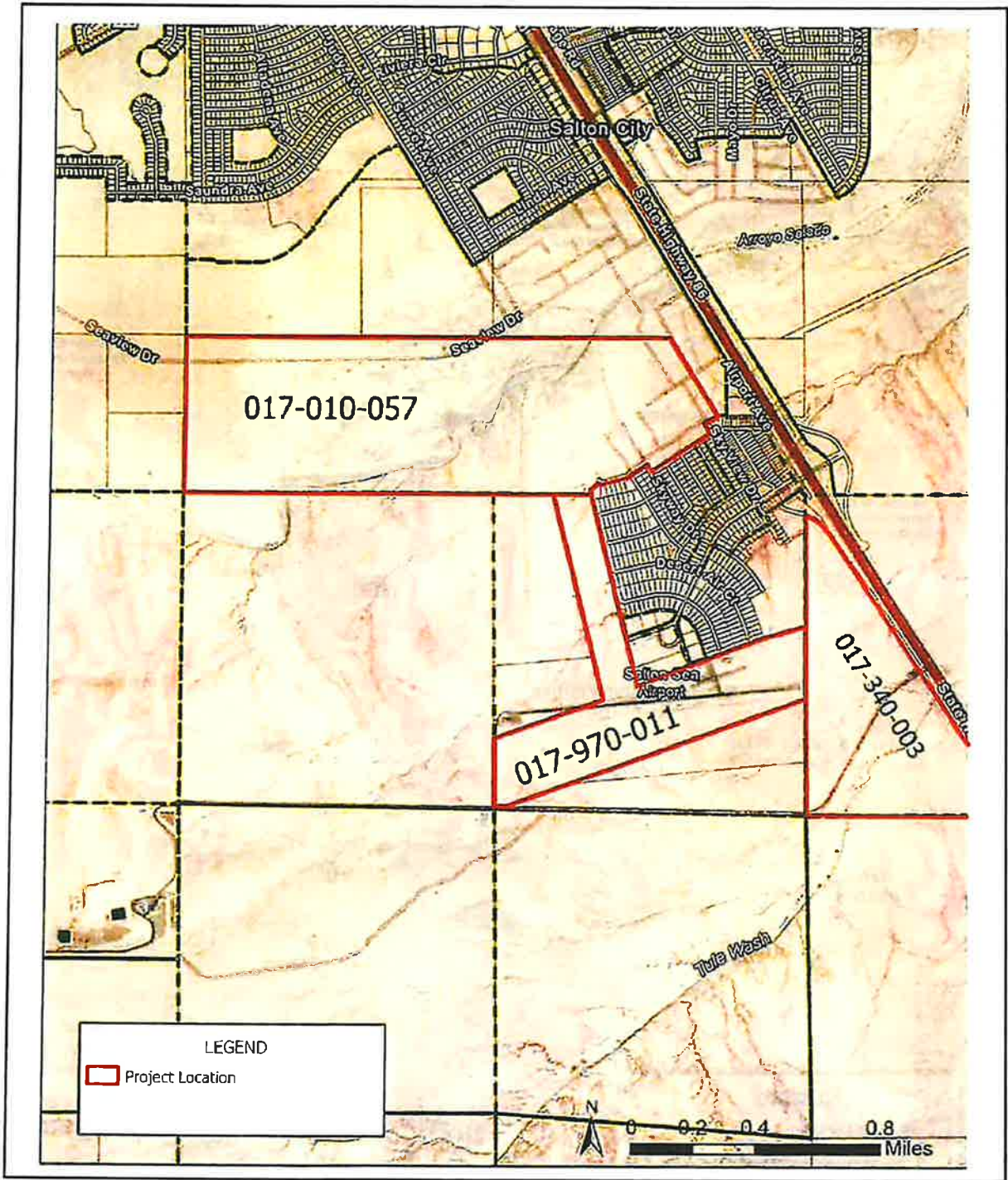
EEC ORIGINAL PKG



Source: Esri, 2023.



**Regional Location**  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 1

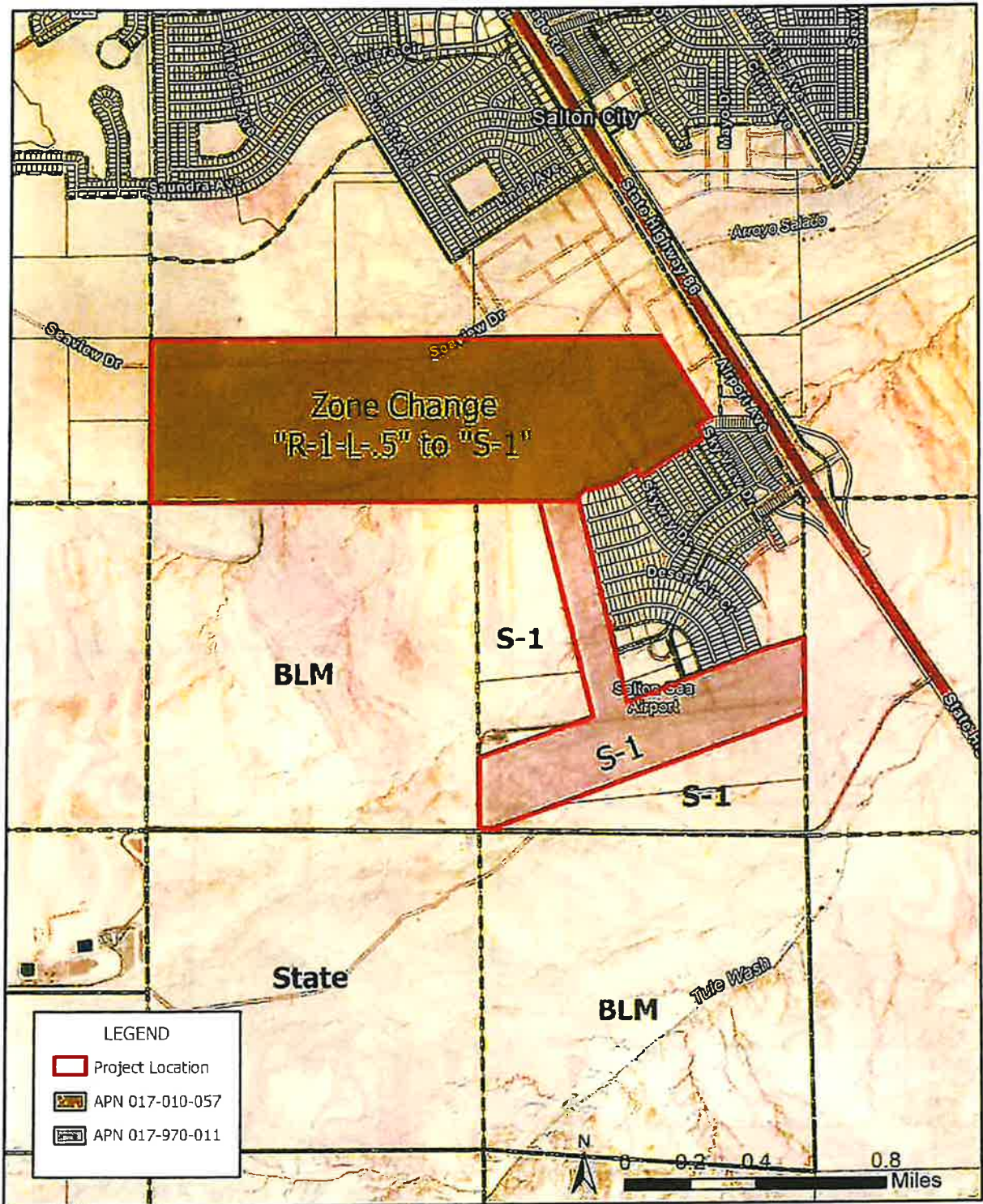


Source: ESRI, 2023



Project Area  
Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-003 Project  
Figure 2

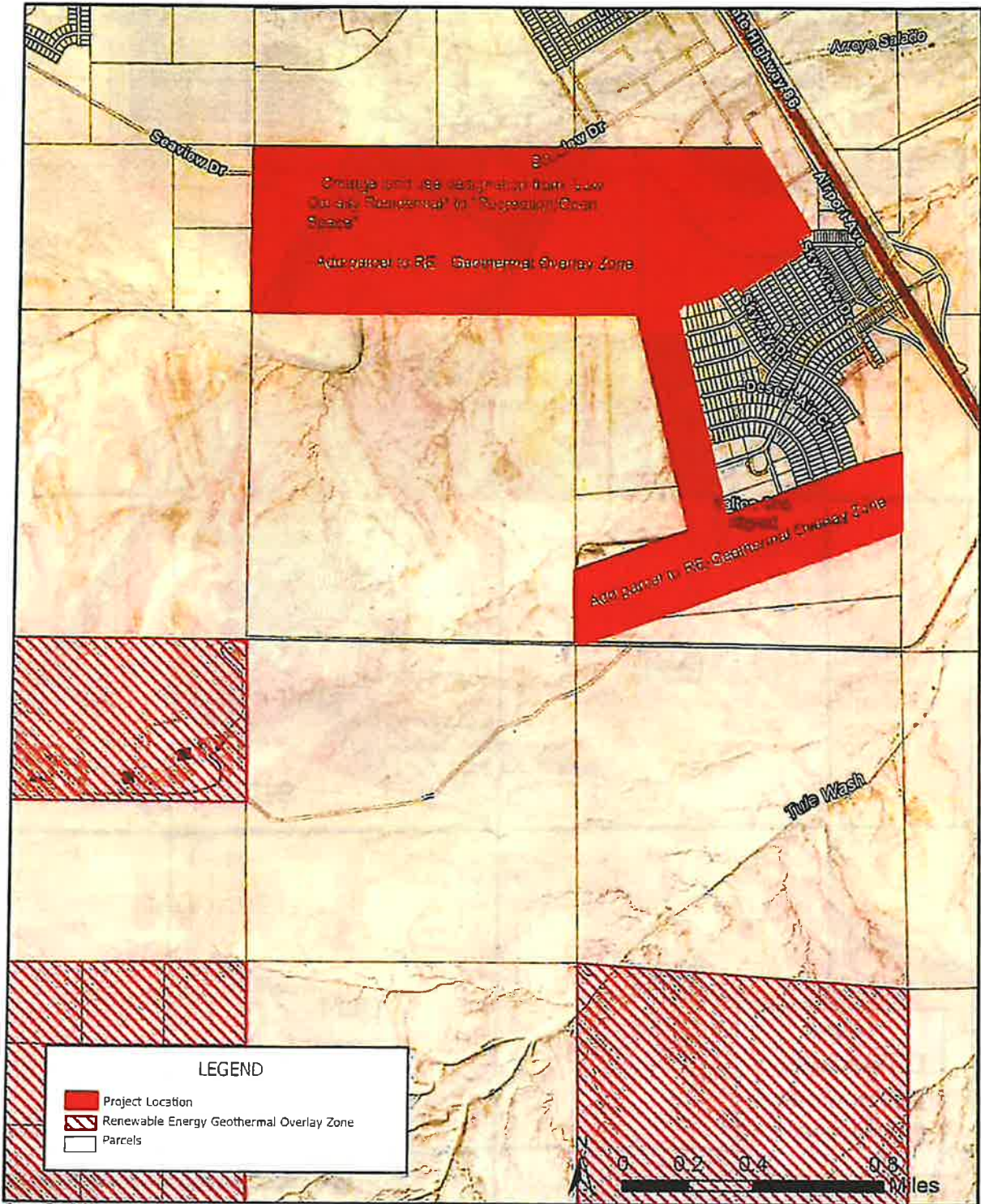
EEC ORIGINAL PKG



Source: Esri, 2023.



Proposed Zone Change  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 3



Proposed General Plan Amendment  
 Ormat-Truckhaven Geothermal Exploration Well ZC#22-0004/GPA#22-0003  
 Figure 4



Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0748**

Barona Group of the Capitan Grande  
Art Bunce, Attorney  
101 State Pl  
Escondido, CA 92029

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Bunce,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0755

Campo Band of Diegueno Mission Indians  
Ralph Goff  
36190 Church Road Suite 1  
Campo, CA 91906

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Goff,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**).

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**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than March 20, 2024 so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0762

Ewiiapaayp Band of Kumeyaay Indians  
Michael Garcia  
4054 Willows Road  
Alpine, CA, 91901

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Garcia,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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EEC ORIGINAL PKG



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0779**

Ewiiapaayp Band of Kumeyaay Indians  
Robert Pinto  
4054 Willows Road  
Alpine, CA, 91901

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Pinto,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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**EEC ORIGINAL PKG**



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0786**

Ilipay Nation of Santa Ysabel  
Clint Linton  
P.O. Box 507  
Santa Ysabel, CA, 92070

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Linton,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0793

Inaja-Cosmit Band of Indians  
Rebecca Osuna  
2005 S. Escondido Blvd.  
Escondido, CA, 92025

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Osuna,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps

DBLA\IS\AIR\user\dAPN\17\01\0057\GPA22-0003\SB18 & AB 52\SB-18 Letter DRAFT.docx

EEC ORIGINAL PKG



Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0816

Jamul Indian Village  
Erica Pinto  
P.O. Box 612  
Jamul, CA, 91935

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Pinto,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps

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EEC ORIGINAL PKG



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0809

Jamul Indian Village  
Lisa Cumper  
P.O. Box 612  
Jamul, CA, 91935

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Cumper,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L5 to S-1 (ZC#22-0004);
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- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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EEC ORIGINAL PKG



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0823

Kwaaymii Laguna Band of Mission Indians  
Carmen Lucas  
P.O. Box 775  
Pine Valley, CA 91962

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Lucas,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**).

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- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPÀ #22-0003); and,
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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EEC ORIGINAL PKG





Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0830**

La Posta Band of Diegueno Mission Indians  
Gwendolyn Parada  
8 Crestwood Road  
Boulevard, CA, 91905

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Parada,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

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**SB 18 Notification**

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Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0847

Manzanita Band of Kumeyaay Nation  
Angela Elliott Santos  
P.O. Box 1302  
Boulevard, CA 91905

**Re: Project Notification Pursuant to Senate Bill 18 for the Omat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Santos,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Omat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0854**

Mesa Grande Band of Diegueno Mission Indians  
Michael Linton  
P.O Box 270  
Santa Ysabel, CA, 92070

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Linton,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0878**

Quechan Tribe of the Fort Yuma Reservation  
Jordan Joaquin  
P.O. Box 1899  
Yuma, AZ, 85366

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Joaquin,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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Jim Minnick  
DIRECTOR

## Imperial County Planning & Development Services Planning / Building

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December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0861

Quechan Tribe of the Fort Yuma Reservation  
Jill McCormick  
P.O. Box 1899  
Yuma, AZ, 85366

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. McCormick,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0885

Quechan Tribe of the Fort Yuma Reservation  
Scott Manfred  
P.O. Box 1899  
Yuma, AZ, 85366

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Manfred,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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EEC ORIGINAL PKG



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0908**

San Pasqual Band of Diegueno Mission Indians  
John Flores  
P.O. Box 365  
Valley Center, CA, 92082

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Flores,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

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**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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**EEC ORIGINAL PKG**



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0892

San Pasqual Band of Diegueno Mission Indians  
Allen Lawson  
P.O. Box 365  
Valley Center, CA, 92082

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Lawson,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location**).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

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**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **March 20, 2024** so that we may discuss this project and any of those identified areas of interest.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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EEC ORIGINAL PKG





## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 1004

Santa Rosa Band of Cahuilla Indians  
Lovina Redner, Tribal Chair  
PO Box 391820  
Anza, CA 92539

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Redner,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

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**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **April 2<sup>nd</sup>, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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EEC ORIGINAL PKG



## Imperial County Planning & Development Services Planning / Building

Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 1028

Soboba Band of Luiseno Indians  
Joseph Ontiveros, Tribal Historic Preservation Officer  
PO Box 487  
San Jacinto, CA 92581

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Ontiveros,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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**Jim Minnick**  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 1011

Soboba Band of Luiseno Indians  
Jessica Valdez, Cultural Resource Specialist  
PO Box 487  
San Jacinto, CA 92581

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Valdez,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0915

Sycuan Band of the Kumeyaay Nation  
Cody Martinez  
1 Kwaaypaay Court  
El Cajon, CA, 92019

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Martinez,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

CERTIFIED MAIL #7018 1830 0000 2357 0922

Sycuan Band of the Kumeyaay Nation  
Bernice Paipa  
910 Willow Glen Drive  
El Cajon, CA, 92019

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Paipa,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps

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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 1066

Torres-Martinez Desert Cahuilla Indians  
Abraham Becerra, Cultural Coordinator  
PO Box 1160  
Thermal CA 92274

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Becerra,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

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- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than April 2<sup>nd</sup>, 2024 so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 1035

Torres-Martinez Desert Cahuilla Indians  
Mary Belardo, Cultural Committee Vice Chair  
PO Box 1160  
Thermal CA 92274

**Re: Project Notification Pursuant to Senate Bill 18 for the Omat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Belardo,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Omat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Omat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
- A "General Plan Amendment" to add parcel APN 017-010-057 to Imperial County General Plan Geothermal Overlay Zone.

Because the parcel on which Well #32-5 and Well #47-5 are located (APN 017-970-011) is outside of the Geothermal Overlay Zone, the Project also includes a General Plan Amendment to add parcel APN 017-970-011 to the Imperial County General Plan Geothermal Overlay Zone. The proposed Zone Change and General Plan Amendment are depicted on **Figure 3** and **Figure 4**, respectively.

**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **April 2<sup>nd</sup>, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:

  
David Black, Planner IV

Attachment: Project Location Maps

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EEC ORIGINAL PKG



## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 1042

Torres-Martinez Desert Cahuilla Indians  
Alesia Reed, Cultural Committee Chairwoman  
PO Box 1160  
Thermal CA 92274

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Ms. Reed,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

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**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **April 2<sup>nd</sup>, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps

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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

CERTIFIED MAIL # 7018 1830 0000 2357 3763

Torres-Martinez Desert Cahuilla Indians  
Gary Resvaloso, TM MLD  
PO Box 1160  
Thermal CA 92274

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Becerra,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
- A "General Plan Amendment" to change the land use designation for Wells #18-32 and #47-32 (APN 017-010-057) from Low Density Residential to Recreation/Open Space (GPA #22-0003); and,
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**SB 18 Notification**

The County would like to initiate government-to-government consultation for this project. Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party, in identifying any historic properties, including Traditional Cultural Properties that may exist within the project's APE, and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Please provide a response no later than **April 2<sup>nd</sup>, 2024** so that we may discuss this project and any of those identified areas of interest.

Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 28, 2023

**CERTIFIED MAIL # 7018 1830 0000 2357 1059**

Torres-Martinez Desert Cahuilla Indians  
Thomas Torte, Chairperson  
PO Box 1160  
Thermal CA 92274

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Torte,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Special Condition 3 (SC3) of CUP No. 18-0038 noted that two of the six wells, specifically Well #18-32 and Well #47-32, are currently located with the Residential Designation/Zone and would be subject to additional entitlement (i.e., General Plan Amendment, Zone Change, Condition Use Permit, etc.) prior to construction of these wells. For this reason, the proposed Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project consists of the following:

- A "Zone Change" to change the zone classification for Wells #18-32 and #47-32 (APN 017-010-057) from R-1-L.5 to S-1 (ZC#22-0004);
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**SB 18 Notification**

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Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0946**

Viejas Band of Kumeyaay Indians  
Ernest Pingleton  
1 Viejas Grade Road  
Alpine, CA, 91901

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Pingleton,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

On December 11, 2019, the Imperial County Planning Commission adopted a Mitigated Negative Declaration and approved Conditional Use Permit (CUP) No. 18-0038 for the Truckhaven Geothermal Exploration Well Project. The CUP authorized the drilling, testing and operation of up to six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area (see **Figure 2 – Project Location** ).

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**SB 18 Notification**

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Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps  
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## Imperial County Planning & Development Services Planning / Building

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Jim Minnick  
DIRECTOR

December 20, 2023

**CERTIFIED MAIL #7018 1830 0000 2357 0939**

Viejas Band of Kumeyaay Indians  
Ray Teran  
1 Viejas Grade Road  
Alpine, CA, 91901

**Re: Project Notification Pursuant to Senate Bill 18 for the Ormat Truckhaven  
Geothermal Exploration Well Project in Imperial County, California**

Dear Mr. Teran,

Pursuant to the provisions of Senate Bill 18, as the lead agency under the California Environmental Quality Act (CEQA), the County of Imperial (County) hereby extends an invitation to consult on the CEQA review of the **Ormat Truckhaven Geothermal Exploration Well Project**.

To assist in your evaluation the County has conducted a Sacred Land File search through the Native American Heritage Commission.

### **Project Summary**

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**SB 18 Notification**

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Should you have any questions about this project, you may contact David Black, Planner IV, at (442) 265-1746 or via e-mail at [DavidBlack@co.imperial.ca.us](mailto:DavidBlack@co.imperial.ca.us).

Sincerely,

JIM MINNICK, DIRECTOR  
Imperial County Planning & Development Services

BY:   
David Black, Planner IV

Attachment: Project Location Maps

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**D-3**

**Native American  
Consultation  
Responses**

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**From:** Ray Teran <rteran@viejas-nsn.gov>  
**Sent:** Thursday, January 4, 2024 1:23 PM  
**To:** David Black <DavidBlack@co.imperial.ca.us>  
**Cc:** Ernest Pingleton <epingleton@viejas-nsn.gov>; alan hatcher <Hatchera77@hotmail.com>  
**Subject:** Ormat Truckhaven Geothermal Exploration Well Project

**CAUTION:** This email originated outside our organization; please use caution.

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has cultural significance or ties to Viejas. Cultural resources have been located within or adjacent to the APE-DE of the proposed project.

Viejas Band request that a Kumeyaay Cultural Monitor be on site for ground disturbing activities and to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

If you wish to utilize Viejas cultural monitors (Viejas rate is \$54.15/hr. plus GSA mileage), please call Ernest Pingleton at 619-655-0410 or email, [epingleton@viejas-nsn.gov](mailto:epingleton@viejas-nsn.gov), for contracting and scheduling. Thank you.

If a Tribe, having a closer proximity to the Project, requests to perform cultural monitoring, Viejas will differ to them.

*Ray Teran*  
Viejas Tribal Government  
Resource Management Director  
619-659-2312  
[rteran@viejas-nsn.gov](mailto:rteran@viejas-nsn.gov)



EEC ORIGINAL PKG

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RECEIVED  
OCT 05 2022  
IMPERIAL COUNTY  
PLANNING & DEVELOPMENT SERVICES



ATTN: Mr. Dave Black  
County of Imperial – Planning and Development Services  
801 W. Main Street  
El Centro, CA 92243

Re: Truckhaven/Orni 5 Geothermal Exploration Well Project – Application for Zone Change and General Plan Amendment

Dear Mr. Black:

ORNI 5 (Applicant) proposes to drill and test up to six geothermal exploration wells (exploratory wells) on private and State lands in the Truckhaven Geothermal Exploration Area, located south-southwest of Salton City in western Imperial County (County), California. Each of the proposed geothermal exploration wells would be located on separate, individual well pads that would be constructed on lands under geothermal lease to the Applicant. Portions of the Project are located on privately owned parcels in unincorporated Imperial County and within the Western Shores Urban Plan Area and, therefore, are under County jurisdiction (APNs 017-010-057 and 017-970-011; Figure 1).

On December 11, 2019, the County Planning Commission approved Conditional Use Permit (CUP) # 18-0038. Included in the CUP, Special Condition 3 (SC3) requires:

*Wells #18-32 and #747-32 are currently located within Residential designation/zone and would be subject to additional entitlements (i.e. General Plan Amendment, Zone Change, Conditional Use Permit, etc.) prior to any construction for these two wells.*

In accordance with SC3 and in order to be consistent with the Project's proposed use, the Applicant is requesting a Zone Change (ZC) for APN 017-010-057 from the existing zoning of R-1 to S-1, and a General Plan (GP) Amendment (GPA) from *Low Density Residential* to *Recreational/Open Space*. APN 017-970-011 would not require a ZC or General Plan Designation change because the proposed Project is consistent with the existing zoning and GP designation; however, both parcels would need to be added to the GP's Geothermal Renewable Energy Overlay Zone (Figure 2). Table 1 below provides a summary of the proposed zoning and GP changes.

ORMAT NEVADA, INC.  
6140 Plumas Street, Reno, NV 89519, USA • +1-775-356-9029 • ormat@ormat.com

ormat.com

ZC 22 - 0004

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**Table 1. Summary of the Proposed Zone Changes and General Plan Amendments**

APN	Zoning		General Plan		Geothermal Overlay
	Current	Proposed	Current Designation	Proposed Designation	
017-010-057	R-1	S-1	Low Density Residential	Recreational / Open Space	Expand to Include Parcel
017-970-011	S-1	No proposed change	Recreational / Open Space	No proposed change	Expand to Include Parcel

Please let us know if you have any questions or concerns regarding this letter and associated application materials enclosed herein:

- Zone Change Application
- Figure 1 - Existing Zoning and GP Designations
- Figure 2 - Existing Geothermal Overlay
- Check for the \$13,500 Application Fees

Please let us know if we can provide any additional information, specifically if it would be helpful to review any of the prior documentation and analyses conducted for the Project while the CUP was processed.

Sincerely,



Kim Carter  
 Permitting Manager  
 Ormat Nevada, Inc.  
[kcarter@ormat.com](mailto:kcarter@ormat.com)  
 Mobile: (775) 446-9648

# CHANGE OF ZONE

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.  
801 Main Street, El Centro, CA 92243 (760) 482-4236

- APPLICANT MUST COMPLETE ALL NUMBERED (black & blue) SPACES - Please type or print -

1. PROPERTY OWNER'S NAME ORNI 5 LLC		EMAIL ADDRESS	
2. MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV		ZIP CODE 83519	PHONE NUMBER
3. ENGINEER'S NAME	CA. LICENSE NO.	EMAIL ADDRESS	
4. MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV		ZIP CODE 89519	PHONE NUMBER 775-356-9029
5. ASSESSOR'S PARCEL NO. 017-010-057	ZONING (existing) R-1	ZONING (proposed) S-1	
6. PROPERTY (site) ADDRESS		SIZE OF PROPERTY (in acres or square foot) 520 acres	
7. GENERAL LOCATION (i.e. city, town, cross street) Near Salton Sea			
8. LEGAL DESCRIPTION <u>S31 T10S R10E Sec 35 and 36</u>			
8. DESCRIBE CURRENT USE ON / OF PROPERTY (list and describe in detail) <u>None/Vacant</u>			
9. PLEASE STATE REASON FOR PROPOSED USE (be specific) <u>Six geothermal exploration wells on private and State lands in the Truckhaven Geothermal Exploration Area, located south-southwest of Salton City in western Imperial County. A 3D survey of the geology below the Truckhaven leasing is required to understand the underlying geothermal system.</u>			
10. DESCRIBE SURROUNDING PROPERTY USES <u>Lands to the southeast comprise scattered single-family residences. The Imperial County Dump is southwest of the Project site. The remaining properties surrounding the Project are vacant.</u>			

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Elizabeth Helms, Secretary

September 23, 2022

Print Name

Date

*Elizabeth Helms*

Signature

## REQUIRED SUPPORT DOCUMENTS

- A. SITE PLAN
- B. PRELIMINARY TITLE REPORT (6 months or newer)
- C. FEE \_\_\_\_\_
- D. OTHER \_\_\_\_\_

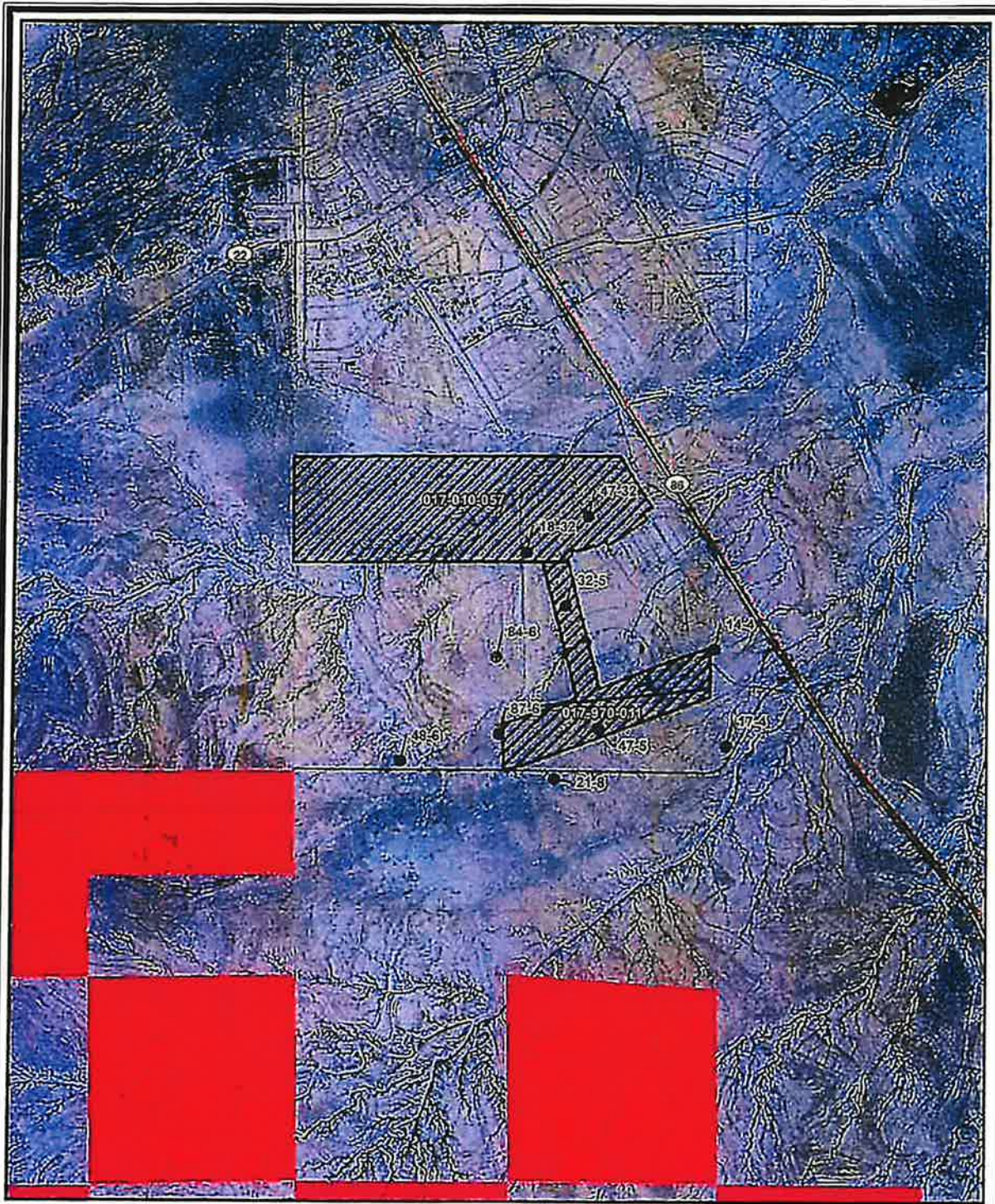
APPLICATION RECEIVED BY: _____	DATE _____	REVIEW / APPROVAL BY OTHER DEPT'S required. <input type="checkbox"/> P. W. <input type="checkbox"/> E. H. S. <input type="checkbox"/> A. P. C. D. <input type="checkbox"/> O. E. S. <input type="checkbox"/> _____ <input type="checkbox"/> _____
APPLICATION DEEMED COMPLETE BY: _____	DATE _____	
APPLICATION REJECTED BY: _____	DATE _____	
TENTATIVE HEARING BY: _____	DATE _____	
FINAL ACTION: <input type="checkbox"/> APPROVED <input type="checkbox"/> DENIED	DATE _____	



ZC #

EEC ORIGINAL PKG

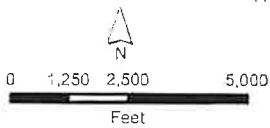






 Parcels     ● Well Sites  
**Renewable Energy Overlay Zones**  
 Geothermal

**Figure 2**  
 Truckhaven Geothermal Exploration Well Project  
 Existing Geothermal Overlay



**Attachment C**  
**Comment Letters**

AIR POLLUTION CONTROL DISTRICT



March 19, 2024

Mr. Jim Minnick  
Planning Director  
801 Main Street  
El Centro, CA 92243

**RECEIVED**

By Imperial County Planning & Development Services at 4:57 pm, Mar 19, 2024

SUBJECT: Notice of Intent for a Mitigated Negative Declaration for Zone Change 22-0004 & General Plan Amendment 22-0003 – ORNI 5 LLC

Dear Mr. Minnick,

The Imperial County Air Pollution Control District (Air District) thanks you for the opportunity to review and comment on the Notice of Intent (NOI) for the preparation of a Mitigated Negative Declaration (MND) for Zone Change 22-0004 and General Plan Amendment (GPA) 22-0003 (Project). The project is located in the Truckhaven Geothermal Exploration Area and proposes the zone change and general plan amendments as additional entitlements as mentioned in Conditional Use Permit (CUP) 18-0038 which authorized up to six geothermal exploration wells. The Zone Change will change the zone classification of Assessor's Parcel Number (APN) 017-010-057, which would contain proposed wells 18-32 and 47-32, from R-1-L.5, Low Density Residential, to S-1, Recreation/Open Space. The project also proposes General Plan Amendments to change the land use designation for wells 18-32 and 47-32 from Low Density Residential to Recreation/Open Space; to add oil, gas, geothermal exploration uses and major facilities relating to the generation and transmission of electrical energy as allowable uses within the West Shores/Salton City Urban Area Plan; and to add parcels APN 017-010-057 and APN 017-970-011 to Imperial County's General Plan Geothermal Overlay Zone.

After reviewing its records, the Air District identified 3 active Air District permits maintained by the applicant for geothermal wells in the Truckhaven area. The Air District permits are 4401, 4664, and 4678 and correspond to wells identified as well 81-7, 87-6, and 84-6 respectively. The well numbers on the active permits do not correspond to the well numbers identified in the project description. Therefore, the Air District reminds the applicant that they must submit an application for engineering review of the wells and be issued a valid Authority to Construct (ATC)/Permit to Operate (PTO) prior to beginning construction/drilling. The project must comply with all Air District rules and regulations, all Air District permit conditions, and all CUP conditions.

For your convenience, the Air District's rules and regulations are available on our website at <https://apcd.imperialcounty.org/rules-and-regulations/> and the permit application can be found

here <https://apcd.imperialcounty.org/engineering/>. Please feel free to call our office at (442) 265-1800 should you have any questions or concerns.

Respectfully,



Ismael Garcia  
Environmental Coordinator II



Reviewed by,  
Monica N. Soucier  
APC Division Manager

## California Department of Transportation

DISTRICT 11  
4050 TAYLOR STREET, MS-240  
SAN DIEGO, CA 92110  
(619) 985-1587 | FAX (619) 688-4299 TTY 711  
[www.dot.ca.gov](http://www.dot.ca.gov)



March 19, 2024

**RECEIVED**

By Imperial County Planning & Development Services at 3:28 pm, Mar 19, 2024

11-IMP-86  
PM 53.3

GPA22-0003 ZC22-0004 Ormat-Truckhaven Geothermal  
MND/SCH#2024020495

Mr. Derek Newland  
Planner III  
Imperial County Department of Planning and Development Services  
801 Main Street  
El Centro, CA 92243

Dear Mr. Newland:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Mitigated Negative Declaration (MND) for the GPA22-0003 ZC22-0004 Ormat-Truckhaven Geothermal Project (Project) located near State Route 86 (SR-86). The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Caltrans has the following comments:

### **Aeronautics**

The exploratory well sites are located within 1 mile of the Salton Sea Airport, a public use airport that is privately owned by Burrtec Waste Industries. The Salton Sea Airport is included within the Airport Land Use Compatibility Plan for Imperial County Airport (County of Imperial, 1996).

### Amending a General Plan

Per the California Public Utilities Code Section 21001 et seq. relating to the State Aeronautics Act, Section 21676(b) prior to the amendment of a general plan...within the planning boundary established by the airport land use commission pursuant to Section 21675, the local agency shall first refer the proposed action to the commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. Any proposed development in the defined safety zones, therefore, must adhere to the safety criteria and restrictions defined in the

Mr. Derek Newland  
March 19, 2024  
Page 2

Airport Land Use Compatibility Plan(s) adopted by the ALUC pursuant to the PUC, Section 21674.

#### Obstruction Evaluation

In accordance with APM-HAZ-2, the Applicant will be required to file a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) due to the height of the drill rigs.

The proposed Project must comply with requirements outlined by the FAA, specified in Title 14 of the Code of Federal Regulations, Part 77. (14 CFR Part 77). Title 14 CFR Part 77.9 provides vertical and horizontal criteria for construction near an airport. Moreover, the California Public Utilities Code Section 21659 prohibits structural hazards near airports. An Obstruction Analysis will be required by the Federal Aviation Administration (FAA) in accordance with Federal Aviation Regulation, Part 77 "Objects Affecting Navigable Airspace." To ensure compliance notices should be submitted to the FAA's Obstacle Evaluation Group (OEG) online at the following site:

<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

Additionally, in accordance with Condition S-2 of CUP#18-0038, Well #87-6 shall be located no closer than one thousand (1,000) feet from the Salton Sea Airport Runway.

Caltrans Aeronautics encourages the direct communication with the FAA and Burrtec Waste Industries, the owner of Salton City Airport throughout various phases of the Project. Burrtec Waste Industries shall be given prior notice of all drilling and construction operations for each proposed exploratory wells located within 1 mile of the airport.

These comments delineate the areas of review by Caltrans Aeronautics concerning airport-related noise, safety, and land use planning issues. If you have any questions, please contact me by email at [tiffany.martinez@dot.ca.gov](mailto:tiffany.martinez@dot.ca.gov). The Aviation Safety Officer for this area may also be reached for advisory or technical comments as necessary.

#### **Traffic Control Plan**

Please provide a Traffic Control Plan to Caltrans at least 30 days prior to the start of any construction. We would like a copy to ensure construction impacts from construction activities to the State Highway System and travelling public are minimized/in place. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during closures, including routes and signage.

Mr. Derek Newland  
March 19, 2024  
Page 3

Potential impacts to the highway facilities (SR-86) and traveling public from the detour, demolition and other construction activities should be discussed and addressed before work begins.

### **Design**

The following Caltrans projects have footprints passing by the area:

- Project ID # 1122000280 Bridge Preservation Project
  - First Working Day anticipated June 01, 2024
  - Contract Acceptance anticipated March 01, 2025
  
- Project ID # 1123000001 Broadband Project
  - Approve Contract anticipated December 05, 2024
  - Contract Acceptance anticipated May 15, 2026
  - Fiber Optic conduit line running under IMP-086 in State Right-of-Way

### **Right-of-Way**

- Per Business and Profession Code 8771, perpetuation of survey monuments by a licensed land surveyor is required, if they are being destroyed by any construction.
- Any work performed within Caltrans' R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans' R/W prior to construction.

Additional information regarding encroachment permits may be obtained by contacting the Caltrans Permits Office at (619) 688-6158 or emailing [D11.Permits@dot.ca.gov](mailto:D11.Permits@dot.ca.gov) or by visiting the website at <https://dot.ca.gov/programs/traffic-operations/ep>. Early coordination with Caltrans is strongly advised for all encroachment permits.

If you have any questions or concerns, please contact Charlie Lecourtois, LDR Coordinator, at (619) 985-4766 or by e-mail sent to [Charlie.lecourtois@dot.ca.gov](mailto:Charlie.lecourtois@dot.ca.gov).

Sincerely,

*Kimberly D. Dodson*

KIMBERLY D. DODSON, G.I.S.P.  
Acting Branch Chief  
Local Development Review



March 26, 2024

Jim Minnick  
Director, Imperial County  
Department of Planning and Development Services  
801 Main Street, El Centro, CA  
Email: [jimminnick@co.imperial.ca.us](mailto:jimminnick@co.imperial.ca.us)  
Phone: (442) 265-1736

Assessor Parcel Number(s): 017-970-011, 017-010-057, 017-340-003  
Project Address: 747 Skyview Drive, Salton City, CA 92275  
Property Owner: Imperial County  
Project Name: Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project

Dear Jim Minnick,

The California Geologic Energy Management Division (CalGEM) appreciates the opportunity to comment on the Mitigated Negative Declaration (MND) for the Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project (Project). CalGEM authority is set forth in Division 3 of the Public Resources Code (PRC), and Title 14 of the California Code of Regulations (CCR).

CCR Chapter 2 Article 1 §1681 establishes implementation of the California Environmental Quality Act (CEQA) and geothermal exploratory projects, Article 2 and 3 address general responsibilities over geothermal projects, and PRC Chapter 4 §3700-3776 establishes established CalGEM authority over geothermal resources. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with activities near the development and operation of geothermal wells.

CalGEM has received and reviewed the Project MND dated February 2024. CalGEM assists local permitting agencies, property owners, and developers in making wise land use decisions regarding potential activities near oil, gas, or geothermal wells.

This letter contains some background on the Project from the MND, discussion with the MND preparer (Christina Willis, Willis Environmental Planning), and information from the Imperial County website as well as CalGEM's comments and concerns related to the Project.



Jim Minnick  
Imperial Co. Dept. of Planning and Development Services  
March 26, 2024  
Page 2 of 5

## **Background**

The Ormat-Truckhaven Geothermal Exploration Well Zone Change and General Plan Amendment Project area is located within the "Truckhaven Geothermal Leasing Area" west of the Salton Sea and south-southwest of Salton City in western Imperial County, California. The six (6) exploratory wells included in the Truckhaven Geothermal Exploratory Well Project are located within the USGS Geologic Survey 7.5' quadrangle for Kane Springs NW within the three (3) parcels and are also located within the West Shores/Salton City Urban Area Plan (2000), west of State Route 86 and east of the northwest boundary of the Ocotillo Wells State Vehicular Recreation Area (SVRA).

It is CalGEM's understanding that an MND was prepared and certified in December 2019 for this same Project. However, the MND and subsequent permit did not address the need for a rezoning of the area to allow for the implementation of the Project. Therefore, this revised MND was prepared to address all of the actions of the 2019 MND, including a zoning change. Note that surveys addressed in the 2019 MND are not included in this MND as these have already been performed after the 2019 MND was certified and were not subject to limitations based on the zoning of the area.

Specifically in terms of zoning, the geothermal exploratory wells located within the Assessor's Parcel Number (APN) 017-970-011 (Well Site #32-5 and Well Site #47-5) require a General Plan Amendment to add this parcel to the Imperial County General Plan's Geothermal Energy Overlay Zone. The geothermal exploratory wells located within APN 017-010-057 (Wells #18-32 and #47-32) would require a Zone Change and General Plan Amendment to change the zone classification from R-1-L.5 to S-1, change the land use designation from Low Density Residential to Recreation/Open Space, and to add parcel APN 017-010-057 to Imperial County General Plan's Geothermal Energy Overlay Zone. Additionally, a General Plan Amendment is needed to add geothermal exploration wells as an allowable use within the Recreation and Open Space designation of the West Shores/Salton City Urban Area Plan (2000).

The well sites have not been installed and are currently vacant, unirrigated, desert land that is sparsely vegetated and primarily flat. Primary highway access to the proposed well sites would be provided off State Route 86 to Airpark Drive or County Dump Road. Existing access roads would be utilized to the extent practical. The access roads would be constructed or improved with gravel and/or maintained as needed to safely accommodate the traffic required for the exploration well drilling activities. Roadbeds would typically be approximately twenty (20) feet in width.

The exploration well program includes ground disturbing activities such as constructing or improving access roads, grading and leveling well pads, digging containment basins, drilling the proposed wells, and re-grading and spreading topsoil following

Jim Minnick  
Imperial Co. Dept. of Planning and Development Services  
March 26, 2024  
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abandonment (if necessary). The duration for well pad construction, drilling, testing, and cleanup would be 90 days. Water required for well pad and access road construction and well drilling would typically average about 50,000 gallons per day. Water necessary for these activities would be purchased from the Coachella Valley Water District via a fire hydrant.

Upon the completion of each well drilled and flow-tested, a decision would be made by the Applicant regarding the commercial potential of each well. If a well is judged by the Applicant to have any commercial potential, well operations would likely be suspended pending application for and receipt of regulatory approvals to place the well into commercial service through a new pipeline to a new geothermal power plant or direct use facility. Any future facilities would need to undergo CEQA review as a separate project (exploratory geothermal projects can be considered separate and distinct from a field development project as allowed under CEQA section 21065.5 and 21090.1 for exploratory geothermal projects with up the six wells).

If a well is judged to not have commercial potential, it may continue to be monitored, or it may be abandoned.

#### **General Comments: Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project**

Action on a CalGEM Notice of Intention (NOI) is a discretionary act and is subject to CEQA. Imperial County Department of Planning and Development Services will act as the Lead Agency in satisfying CEQA requirements for the proposed Project, while CalGEM will be a Responsible Agency. A Responsible Agency complies with CEQA "by considering the EIR or negative declaration prepared by the Lead Agency and by reaching its own conclusions on whether and how to approve the project involved" (State CEQA Guidelines Section 15096(a)). CEQA requires an analysis of the environmental impacts of the proposed Project, including cumulative impacts; the identification of mitigation measures that could minimize any significant effects on the environment; and a monitoring-reporting program to ensure compliance with those mitigation measures adopted by the Lead Agency.

No well work may be performed on any oil, gas, or geothermal well without written approval from CalGEM. Well work requiring written approval includes, but is not limited to, drilling wells, modifications to well casings, and/or any abandonment or re-abandonment work. If abandonment is necessary, CalGEM regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR § 1723.5 states well casings shall be cut off at least five (5) feet but no more than 10 feet below grade.

CalGEM makes the following additional recommendations:

1. To ensure that present and future property owners are aware of (a) the existence of all wells located on the property, and (b) potentially significant issues

Jim Minnick  
Imperial Co. Dept. of Planning and Development Services  
March 26, 2024  
Page 4 of 5

- associated with any improvements near oil or gas wells, CalGEM recommends that information regarding project wells, and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property.
2. CalGEM recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development.

### **Specific Comments: Ormat-Truckhaven Geothermal Zone Change and General Plan Amendment Project**

CalGEM regulatory conducts responsible agency reviews of CEQA documents. The scope of these reviews includes most issues with the MND as there are many elements of CalGEM regulations in the PRC and the CCR that address a range of issues, including biological resources. Specific comments related to this MND are listed below:

1. Specifics of each location, including latitude and longitude, should be included in the project description.
2. The air quality section of the MND should include the assumptions for the CalEEMod modeling. For example, is off-site vehicle traffic and truck hauling included in the CalEEMod analysis.
3. Specific studies conducted as part of the 2019 MND should be included in this MND, including air quality CalEEMod modeling and the biological resources survey results.
4. As the biological surveys were conducted in 2017, they could be considered out of date. A California Natural Diversity Database (CNDDDB) search of the area within 5 miles of the proposed Project site indicates that the only species of concern (threatened) is the western snowy plover along the lakeshore. As this area is 4–5 miles from the Project site, it is most likely not a concern, but the presence of this species should be discussed and the reasoning behind the lack of concern should be included in the MND.
5. As per aerial examination of the Project site, there is actually very little development in the area even though road infrastructure is shown on the MND maps, and the implication is that it is close to an urban area. This should be clarified in the MND.
6. On Table 3. POTENTIAL CONSULTATION AND PERMITTING REQUIREMENTS
  - a. The 2nd column (Type of Permit/Approval) is missing rework permit as a "Type of Permit/Approval" even though this work is mentioned in the fourth column and is a permit we would issue.
  - b. The 4th column (Purpose) is missing injection operations as a purpose even though our project approval letters are captured in the 2nd column as an injection permit.

Jim Minnick  
Imperial Co. Dept. of Planning and Development Services  
March 26, 2024  
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7. In VII. Geology and Soils section of the document, page 71 has a discussion on subsidence and how it is mitigated. We suggest the addition of the following:

"Well field programs covering production and injection plans are required by the Bureau of Land Management (BLM) and the California Geologic Energy Management Division (CalGEM) for each major geothermal project. Detrimental subsidence from geothermal development would be avoided through careful permit review by CalGEM and the County, establishment of standards for each project, and through impact mitigation and monitoring programs. CalGEM requires the submission of monthly production and injection data and these are monitored for potential issues that may lead to subsidence. CalGEM's injection project approval also includes conditions for subsidence monitoring. Compliance with the well field program and adherence to standards established via coordination with CalGEM and the County would reduce any impacts associated with subsidence; therefore, there would be no impact."

As indicated in PRC § 3714, CalGEM has jurisdictional authority over the drilling, operation, maintenance and abandonment of geothermal resources wells as to encourage the greatest ultimate economic recovery of geothermal resources, to prevent damage to life, health, property, and natural resources, and to prevent damage to, and waste from, the underground geothermal deposits, and to prevent damage to underground and surface waters suitable for irrigation or domestic purposes by reason of the drilling, operation, maintenance, and abandonment of geothermal resources wells. CalGEM does not regulate grading, excavations, or other land use issues.

The statutes and regulations related to geothermal resources can be found here:

<https://www.conservation.ca.gov/calgem/Pages/Oil,-Gas,-and-Geothermal-Rulemaking-and-Laws.aspx>

Should you have any questions, please contact me at 916-203-7785 or via email at [jerry.salera@conservation.ca.gov](mailto:jerry.salera@conservation.ca.gov).

Sincerely,

*Jerry Salera*  
Jerry Salera  
Senior Oil and Gas Engineer (Supv.)

cc: [state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)  
[OLRA@conservation.ca.gov](mailto:OLRA@conservation.ca.gov)  
[jan.peres@conservation.ca.gov](mailto:jan.peres@conservation.ca.gov)