

# PROJECT REPORT

**TO: ENVIRONMENTAL EVALUATION COMMITTEE**  
**FROM: PLANNING & DEVELOPMENT SERVICES**

**AGENDA DATE: February 13, 2025**  
**AGENDA TIME: 1:30PM / No. 1**

PROJECT TYPE: Global Lithium Energy Corp.  
Conditional Use Permit #24-0025 SUPERVISOR DIST #4

LOCATION: 6998 Kalin Road APN: 020-120-025-000

Calipatria, CA PARCEL SIZE: 320-AC

GENERAL PLAN (existing) Agriculture GENERAL PLAN (proposed) N/A

ZONE (existing) A-3-G (Heavy Agricultural, Geothermal Overlay) ZONE (proposed) N/A

GENERAL PLAN FINDINGS  CONSISTENT  INCONSISTENT  MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: \_\_\_\_\_

APPROVED  DENIED  OTHER

PLANNING DIRECTORS DECISION: HEARING DATE: \_\_\_\_\_

APPROVED  DENIED  OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 02-13-2025

INITIAL STUDY: #24-0036

NEGATIVE DECLARATION  MITIGATED NEG. DECLARATION  EIR

## DEPARTMENTAL REPORTS / APPROVALS:

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

Imperial Irrigation District, CEO's Office, CalGEM & Quechan Indian Tribe

## REQUESTED ACTION:

(See Attached)

**NEGATIVE DECLARATION**  
 **MITIGATED NEGATIVE DECLARATION**

*Initial Study & Environmental Analysis  
For:*

**Conditional Use Permit #24-0025  
Initial Study #24-0036  
Global Lithium Energy Corp.**



*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 2025**

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## SECTION 1 INTRODUCTION

### A. PURPOSE

This document is a  policy-level,  project level Initial Study for evaluation of potential environmental impacts resulting with the proposed Conditional Use Permit #24-0025 (Refer to Exhibit "A").

### B. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REQUIREMENTS AND THE IMPERIAL COUNTY'S GUIDELINES FOR IMPLEMENTING CEQA

As defined by Section 15063 of the State California Environmental Quality Act (CEQA) Guidelines and Section 7 of the County's "CEQA Regulations 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), Negative Declaration, or Mitigated Negative Declaration 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 the 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 the proposed applications will not result in any potentially significant environmental impacts and therefore, a Negative Declaration is deemed as the appropriate document to provide necessary environmental evaluations and clearance as identified hereinafter.

This Initial Study and Negative Declaration are 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

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principal responsibility for approving the necessary environmental clearances and analyses for any project in the County.

### C. INTENDED USES OF INITIAL STUDY AND NEGATIVE DECLARATION

This Initial Study and Negative Declaration are informational documents which are 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 and Negative Declaration, prepared for the project will be circulated for a period of 20 days (*30-days if submitted to the State Clearinghouse for a project of area-wide significance*) 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 & NEGATIVE DECLARATION

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

#### SECTION 1

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 2

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 potentially significant impact, potentially significant unless mitigation incorporated, or less than 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 3

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

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preparation of this Initial Study and Negative Declaration.

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

VI. NEGATIVE DECLARATION – COUNTY OF IMPERIAL

VII. FINDINGS

SECTION 4

VIII. RESPONSE TO COMMENTS (IF ANY)

IX. MITIGATION MONITORING & REPORTING PROGRAM (MMRP) (IF ANY)

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. **Potentially Significant Unless 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 and Negative Declaration 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

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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]). This document incorporates by reference appropriate information from the “Final Environmental Impact Report and Environmental Assessment for the “County of Imperial General Plan EIR” prepared by Brian F. Mooney Associates in 1993 and updates.

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 and updates are available, along with this document, at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 Ph. (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 Ph. (442) 265-1736.
- These documents must summarize the portion of the document being incorporated by reference or briefly

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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 County of Imperial General Plan EIR is SCH #93011023.
- The material to be incorporated in this document will include general background information (CEQA Guidelines Section 15150[f]). This has been previously discussed in this document.

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## II. Environmental Checklist

1. **Project Title:** Global Lithium Energy Corp.
2. **Lead Agency:** Imperial County Planning & Development Services Department
3. **Contact person and phone number:** Gerardo A. Quero, Planner II, (442)265-1736, ext. 1748
4. **Address:** 801 Main Street, El Centro CA, 92243
5. **E-mail:** gerardoquero@co.imperial.ca.us
6. **Project location:** 6998 Kalin Road, Calipatria, CA 92233.  
Assessor's Parcel Number (APN) 020-120-025-000.
7. **Project sponsor's name and address:** Global Lithium Energy Corp.  
220 Progress #240  
Irvine, CA 92618
8. **General Plan designation:** Agriculture
9. **Zoning:** A-3-G (Heavy Agricultural with a Geothermal Overlay)

10. **Description of project:** The applicant, Global Lithium Energy Corp., seeks approval for a Conditional Use Permit to allow for the drilling of up to two (2) geothermal exploration wells which aim for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area. The proposed geothermal exploration project consists of up to two (2) geothermal exploration wells with a proposed depth of 500 to 6,000 feet, two (2) 350 by 200 feet well pads, a 300 by 300 feet move on area, within a fenced footprint of approximately 1,300 by 520 feet area on the southeast corner of property located at 6998 Kalin Road, Calipatria, CA.

A maximum of two (2) exploration wells and two (2) well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. Should the exploration program be successful and the data indicate viable resource development, the exploration wells will transition into the permitting phase for full-scale field development as geothermal extraction/return injection wells. If the program is unsuccessful, the exploration wells will be plugged and abandoned in accordance with California Division of Oil, Gas, and Geothermal Resources (CDOGGR) requirements.

11. **Surrounding land uses and setting:** The project site is bound by active farmlands on the North, Kalin Road on the West, the Alamo River on the East, and Lindsey Road on the South. The subject property is described as Lots 5, 6 & the South Half of the Northwest Quarter of Section 1 & the South Half of the Northeast Quarter of Section 2; Township 12 South, Range 13 East of the San Bernardino Base and Meridian (S.B.B.M.), containing approximately 320 Acres. The property is also known as Assessor's Parcel Number (APN) 020-120-025-000.

Per County's Land Use Ordinance (Title 9), Division 5, Section 90509.02, Subsection (bb), Geothermal Test Facilities meeting the requirements in Division 17 are allowed in an A-3 (Heavy Agricultural) zone with an approved Conditional Use Permit (CUP). Additionally, per Division 17 (Renewable Energy Resources), Section 91703.04, Subsection B, Geothermal Test Facilities may be permitted in any zone by the Planning Commission. Also, per Imperial County's Renewable Energy and Transmission Element, Appendix B (Geothermal Resources Development Regulation), Subsection (A)(2) – County Land Use Review, exploratory, test, and production projects are approved by conditional use permit (also referred to as a geothermal permit), which is a land use permit. The permit does not authorize a person or corporation to drill a well or build a plant, but it does authorize a specific parcel of land to have wells drilled or to have plants built upon it.

12. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.): Planning Commission.

**13. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

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Consultation letters were sent to the Quechan and Campo Band of Mission Indian Tribes. A no comments email from the Quechan's Historic Preservation Officer was received on December 10, 2024, in reference to this project. No comments have been received from Campo Band to this date.

**Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code, Section 21080.3.2). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code, Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code, Section 21082.3 (c) contains provisions specific to confidentiality.**

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**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

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

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

**ENVIRONMENTAL EVALUATION COMMITTEE (EEC) DETERMINATION**

After Review of the Initial Study, the Environmental Evaluation Committee has:

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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

**EEC VOTES**

- PUBLIC WORKS
- ENVIRONMENTAL HEALTH SVCS
- OFFICE EMERGENCY SERVICES
- APCD
- AG
- SHERIFF DEPARTMENT
- ICPDS

**YES**

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**NO**

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**ABSENT**

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

*2-13-2025*  
 \_\_\_\_\_  
 Date:

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## PROJECT SUMMARY

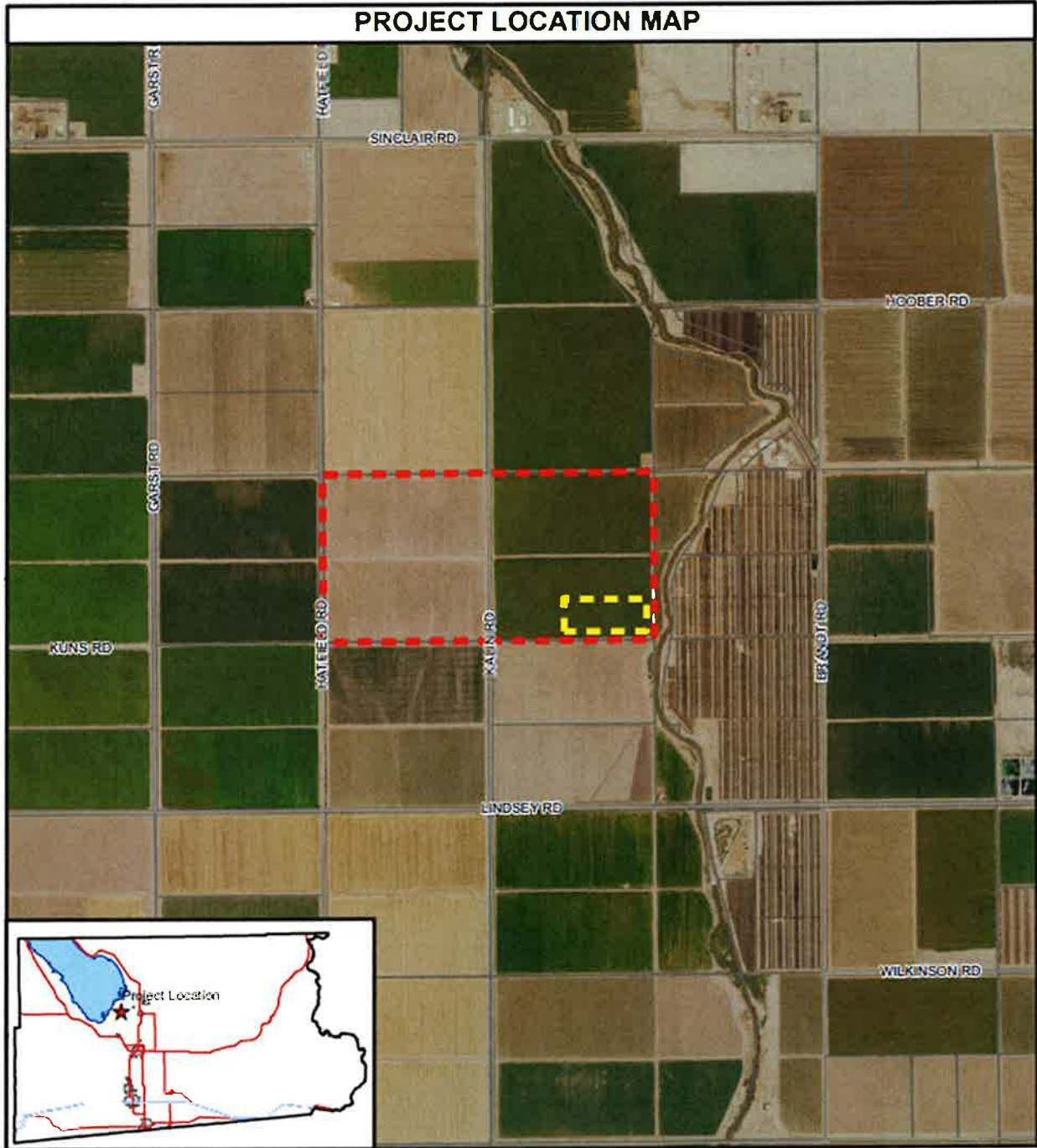
- A. Project Location:** The proposed project would be located at 6998 Kalin Road, Calipatria, CA; Assessor's Parcel Number (APN) 020-120-025-000.
- B. Project Summary:** The applicant, Global Lithium Energy Corp., seeks approval for a Conditional Use Permit to allow for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. If the exploration program is successful and the data indicates viable resource development, the exploration wells will transition into the permitting phase for full-scale field development as geothermal extraction/return injection wells. If the program is unsuccessful, the exploration wells will be plugged and abandoned in accordance with California Division of Oil, Gas, and Geothermal Resources (CDOGGR) requirements.
- C. Environmental Setting:** The proposed project parcel is relatively flat, located approximately 3 miles northwest of the city limits of the City of Calipatria, bounded by active farmlands on the North, Kalin Road on the West, the Alamo River on the East, and Lindsey Road on the South.
- D. Analysis:** Under the Land Use Element of the Imperial County General Plan, the project site is designated as "Agriculture." It is classified as A-3-G (Heavy Agricultural with a Geothermal Overlay) per Zone Map #53 of the Imperial County Land Use Ordinance (Title 9). Initial Study #24-0036 will analyze any impacts related to the proposed project.

The proposed geothermal exploration project consists of up to two (2) geothermal exploration wells with a proposed depth of 500 to 6,000 feet, two (2) 350 by 200 feet well pads, a 300 by 300 feet move on area, within a fenced footprint of approximately 1,300 by 520 feet area on the southeast corner of property located at 6998 Kalin Road, Calipatria, CA. No change to the existing zoning is anticipated.





- E. General Plan Consistency:** Per the Imperial County General Plan, the land use designation for this project is "Agriculture" and zoned as A-3-G (Heavy Agricultural with a Geothermal Overlay) per Zone Map #53 of the Imperial County Land Use Ordinance (Title 9). The proposed project is consistent with the General Plan and County Land Use Ordinance, Sections 90509.02 (bb) and 91703.04 (B).

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Exhibit "A"  
Vicinity Map



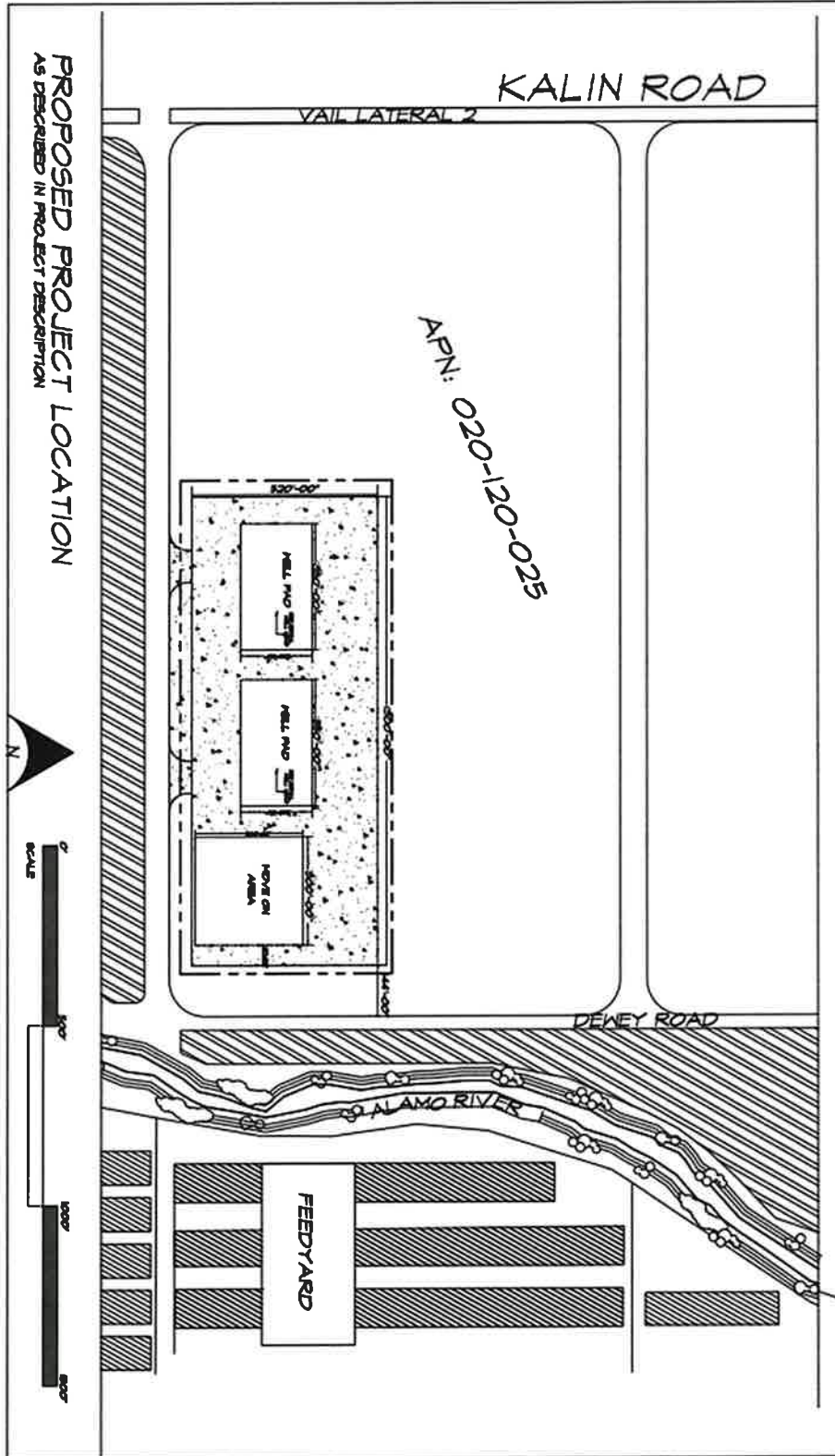
**GLOBAL LITHIUM ENERGY CORP.**  
**CUP #24-0025 / IS #24-0036**  
**APN 020-120-025-000**

-  Project Location
-  Centerline
-  Parcels
-  Project Area



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Exhibit "B"  
Site Plan



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## 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

Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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**I. AESTHETICS**

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

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

**a) Four areas within the County have the potential as state-designated scenic highways. According to Imperial County General Plan Circulation and Scenic Highway Element<sup>1</sup> and California State Scenic Highway System Map,<sup>2</sup> State Route 111 (CA SR-111) is an eligible scenic highway from the County border to Bombay Beach on the Salton Sea and is located northeast of the project site. Highway 78 (CA SR-78) is an eligible scenic highway from its intersection with Highway 86 westward. Both of the eligible highway segments are well within the background distance zone and would not affect views of the proposed project site due to distance. Therefore, no impacts are expected under this criterion.**
- b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?    

**b) As previously stated on section (I)(a), the proposed project is not located near a scenic vista or scenic highway and would not substantially damage any scenic resources. According to Caltrans California State Scenic Highway System Map,<sup>2</sup> the nearest eligible scenic highway is State Route 111 (CA SR-111) from the County border to Bombay Beach on the Salton Sea which is located approximately 8 miles northeast of the proposed project site. Additionally, the project vicinity does not contain any rock outcroppings, trees, or historical buildings. Furthermore, according to the California Historic Resources<sup>3</sup> in Imperial County, the nearest eligible historic building is the Site of Fort Romualdo Pacheco (CA-IMP-12491) which is located approximately 22.5 miles southwest of the project site. Therefore, no substantial damage to scenic resources, including, but not limited to trees, rock outcropping, and historic buildings within a state scenic highway is anticipated. No impacts are expected.**
- c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surrounding? (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) The proposed exploration wells aim to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. The proposed project would not substantially or physically degrade the existing visual character or quality of public views of the site and its surroundings since the existing zoning designation is proposed to remain. No impacts are expected.**
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?    

**d) Each geothermal well would take approximately 30-45 days to complete. Although drilling operations for the proposed geothermal exploration wells would take place 24 hours per day, 7 days per week until the total well depth is reached, the proposed project does not include any substantial source of nighttime light in the project's vicinity. All lighting installed shall be shielded and directed so as to minimize significant off-site glare or adverse light intrusion into neighboring properties and roads. Any impacts are anticipated to be less than significant, with mitigations.**

**Mitigation Measures:**

The following measures shall be implemented to reduce impacts to less than significant.

**AESTH-1: Pre-Construction Meetings.** Project developers would be required to hold preconstruction meetings, if applicable, with affected agencies and designated specialists to coordinate the mitigation strategy for all resources of record. This includes a review of final design and construction documents regarding visual impacts and mitigation.

**AESTH-2: Visual Monitoring during Operations and Maintenance.** Project developers would be required to monitor compliance with mitigation requirements and consult with the affected agencies during operations and maintenance. Maintaining visual resource design elements would include maintaining revegetated surfaces until self-sustaining; keeping facilities in good repair and repainting as necessary; restoring land as soon as possible after disturbance; controlling dust and noxious weeds; and operating so as to avoid high-intensity light (glare) being reflected off site.

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**AESTH-3: Site Reclamation.** Immediate reclamation of the site, either on federal, State, or private land, would be required for renewable energy facilities after construction. These reclamation activities may include restoration of agricultural farmland to the prior condition. Methods for minimizing visual contrast during reclamation and decommissioning include undertaking treatments such as thinning and feathering vegetation at project edges, enhancing contouring, salvaging landscape materials, and revegetating; restoring the project area to predevelopment visual conditions and the inventoried visual quality rating; removing aboveground and near-ground-level structures; contouring soil borrow areas and other features to approximate natural slopes; using native vegetation to establish form, line, color, and texture consistent with the surrounding undisturbed landscape; distributing stockpiled topsoil to disturbed areas and replanting; and removing or burying gravel or other surface treatments.

**AESTH-4: Future renewable energy facilities** would be required to consider sitting and design features that would minimize glint and glare and take appropriate actions. These actions include identifying glint and glare effects, assessing and quantifying these effects to determine potential safety and visual impacts, and having qualified people conduct such assessments. Methods to minimize glint and glare include limiting use of signs; using reflective or luminescent markers instead of permanent lighting; minimizing offsite visibility of signs and lighting; using non-glare materials and appropriate colors; mitigating or offsetting visual impact by reclaiming unnecessary roads, removing abandoned buildings, using underground utility lines, and rehabilitating and revegetating disturbed areas.

**II. AGRICULTURE 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) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area. According to the California Farmland Mapping & Monitoring Program: Imperial County Important Farmland 2022 Map,<sup>4</sup> the proposed project site is classified as Farmland of Statewide Importance. The proposed well pads, approximately 350 by 200 feet, are located on lands currently dedicated to agricultural activities. This project is temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development. The project is not expected to have any significant adverse impact on the surrounding agricultural resources or neighboring farmlands. Additionally, on November 8, 2024, ICPDS received a no comments letter from the Agricultural Commissioner<sup>5</sup> in reference to the proposed project. Furthermore, the proposed wells will not affect forest land, nor will they result in permanent loss, degradation, or conversion of forested areas into non-forest uses. The project will also not lead to the large-scale conversion of farmland, ensuring the continued viability of agricultural operations. Less than significant impacts are expected.**

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

**b) The County of Imperial has no current active Williamson Act contracts. Additionally, according to the California Williamson Act Enrollment Finder,<sup>6</sup> Imperial County is withdrawn from the 2023 Williamson Act; therefore, the proposed project is not expected to conflict with existing zoning for agricultural use, or a Williamson Act Contract. No Impacts are expected.**

- 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) The proposed project site is designated as A-3-G (Heavy Agricultural with a Geothermal Overlay), a zoning classification that permits the development of geothermal test facilities, subject to the approval of a Conditional Use Permit by the County. This zoning designation is specifically intended to accommodate geothermal exploration and related activities, ensuring that such uses align with the region's agricultural and environmental goals while adhering to local regulations and compliance. The proposed geothermal exploration project would not conflict with any zoning designations designed to preserve timber or agricultural resources; therefore, it is not expected to conflict with existing zoning for, or cause rezoning of, forest land (as**

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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)). Additionally, on November 8, 2024, ICPDS received a no comments letter from the Agricultural Commissioner<sup>4</sup> in reference to the proposed project. Less than significant impacts are expected.

- d) Result in the loss of forest land or conversion of forest land to non-forest use?
- d) As previously stated under item (II)(c) above, the proposed project is not located in a forest land with no existing forest lands either on-site or in the project vicinity; therefore, it is not expected to result in the loss of forest land or conversion of forest land to non-forest. No impacts are expected.**
- e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?
- e) As previously stated on sections (II)(a), II(c) and II(d), the proposed geothermal exploration project is temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development. Therefore, less than significant impacts are expected.**

### III. AIR QUALITY

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

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- a) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area, and it is not expected to conflict with or obstruct implementation of the applicable air quality plan. Additionally, per Imperial County Air Pollution Control District's comment letter<sup>7</sup> dated November 7, 2024, the Air District informs the applicant that the wells will require an Air District permit and requesting the applicant to apply for engineering review of the project prior to beginning construction of the project. The project packet identifies that the drilling equipment will be permitted under the California Air Resources Board's (CARB) Portable Engine Registration Program (PERP). The Air District requests to be notified when the equipment will be on site for operation and requests a copy of the PERP registration be shared with the Air District. In the event the equipment is not PERP certified, an application for engineering review of the equipment should be submitted to determine the permitting requirements. The Air District also reminds the applicant that the project must comply with all Air District Rules & Regulations and would emphasize Regulation VIII – Fugitive Dust Rules, a collection of rules designed to maintain fugitive dust emissions below 20% visual opacity. Finally, the Air District requests a copy of the draft CUP prior to recordation for review. Adherence and compliance with APCD's rules and regulations will bring any impacts to less than significant.**
- 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?
- b) As previously stated under item (III)(a) above, the wells must comply with the rules and regulations of the Imperial County Air Pollution Control District, therefore, it is not expected that the proposed project would substantially contribute to an existing or projected air quality violation. Therefore, any impacts are expected to be less than significant.**
- c) Expose sensitive receptors to substantial pollutants concentrations?
- c) As previously stated under items III(a) and III(b), the proposed geothermal exploration project must comply with the rules and regulations set forth by the Imperial County Air Pollution Control District; therefore, the proposed project is not expected to expose sensitive receptors to substantial pollutants concentrations. Compliance with APCD's requirements, rules and regulations would bring any impact to less than significant.**
- d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?
- d) As previously stated on item (III)(c) above, the proposed project does not anticipate creating objectionable odors that would adversely affect a substantial number of people. Also, as previously stated on item (III)(b), compliance with APCD's**

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requirements, rules, and regulations, would bring any impact to less than significant, with mitigations.

**Mitigation Measures:**

**AQ-1:** Prior to commencing construction, the project proponent shall submit a Dust Control Plan to the ICAPCD for approval identifying all sources of PM<sub>10</sub> emissions and associated mitigation measures during the construction and operational phases of their future renewable energy project. The project proponent shall submit a "Construction Notification Form" to the ICAPCD 10 days prior to the commencement of any earthmoving activity. 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-site and off-site unpaved roads segments with 50 or more average vehicle trips per day, shall be effectively stabilized; so as to limit 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 1.0 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.
- The transport of bulk materials on public roads 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 shall be cleaned and/or washed at the delivery site after removal of bulk material, prior to using the trucks to haul material on public roadways.
- All track-out or carry-out on paved public roads, 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, 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 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 except where such material or activity is exempted from stabilization by the rules of ICAPCD.
- The construction of new unpaved roads is prohibited within any area with a population of 500 or more, unless the road meets ICAPCD's 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.

**AQ-2:** The project proponent shall implement all applicable standard mitigation measures for construction combustion equipment for the reduction of excess NOX emissions as contained in the Imperial County CEQA Air Quality Handbook and associated regulations. These measures include:

- 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 five minutes at a maximum.
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (assuming powered by a portable generator set and are available, cost effective, and capable of performing the task in an effective, timely manner).
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to avoid overlap of construction phases, which would reduce short-term impacts).

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IV. **BIOLOGICAL RESOURCES** *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) Although the Imperial County General Plan’s Conservation and Open Space Element,<sup>8</sup> Figure 2 - “Sensitive Species Map,<sup>8a</sup>” and the California Department of Fish and Wildlife Lands Viewer<sup>9</sup> identifies a distribution model and predicted habitat for the Burrowing Owl within the proposed project area and its surroundings, the proposed project does not expect to have any physical changes to the environment. However, according to the Biological Resources Assessment Report<sup>10</sup> prepared for this project, this minimally intrusive project should be allowed to proceed without additional breeding season protocol BUOW surveys and BUOW will be protected using avoidance, minimization and mitigations outlined in Table 4 below.

Table 4: Biological Resources

Location	Description	Recommendation
1. Bioresources map #1 33°9'43.56/115°34'24.72"	BUOW perch 2100 feet North of drilling well site; whitewash, pellets	Monitor during drilling
2. Bioresources map #2 33°9'18.0/115°34'32.7"	One BUOW using irrigation pipe as a shelter 277 feet west of drilling well site, whitewash. Not a nesting burrow	Shelter with strawbales and monitor during drilling
3. Bioresources map #3 33°9'17.7/115°34'41.16"	One BUOW using irrigation pipe as a shelter 995 feet west of drilling well site; whitewash, pellets. Not a nesting burrow	Monitor during drilling
4. Bioresources map #4 33°9'30.61/115°34'25.53"	Perch with whitewash; no BUOW 799 feet north of drilling well site	Monitor during drilling
5. Various	Various Avian sightings documented in Appendix C of Biological Resources Assessment Report	Preconstruction nesting surveys

A preconstruction survey should be carried out 14-30 days and 24 hours prior to initiating ground disturbance. The report should be submitted to the appropriate agencies but not limited to ICPDS. If necessary, an Exclusion Plan would be prepared with consultation with CDFW if BUOW are found on site after the initial preconstruction survey.

As an avoidance activity it is recommended that construction foremen and workers and onsite employees be given bilingual worker training by a qualified biologist regarding burrowing owl that would include the following:

Permittee shall conduct an education program for all persons employed or otherwise working on the Project prior to performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the biology of the habitats and species identified in this letter expected and present at this site. The Designated Biologist or safety manager with access to the Designated Biologist shall also include as part of the education program a brief discussion information about the distribution and habitat needs of any protected species that may be present, legal protections for those species, penalties for violations, and Project specific protective measures included in this Agreement. Interpretation shall be provided for non-English-speaking workers, and the same instruction shall be provided for any new workers prior to their performing work on-site. The Permittee shall prepare and distribute wallet-sized cards or a fact sheet that contains this information for workers to carry on-site. Upon completion of the education program, employees shall sign a form stating they attended the education program and understand all protection measures. These forms shall be filed at the worksite offices and be available to CDFW upon request. The education program shall be repeated annually for part of the Project extending more than one (1) year. Copies of the education program materials shall be maintained at the Project site for workers to reference as needed. Project contractor responsible for environmental (oil spills/oil containment/dust control/erosion control) training.

Permittee shall include a brief invasive species education program for all persons working on the Project prior to the performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the invasive species currently present within the Project site as well as those that may pose a threat to or have the potential to invade the Project site. The brief discussion shall include a physical description of each species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts. The education program shall also include a brief discussion of Best Management Practices (BMPs) to be implemented at the Project site to avoid the introduction and spread of invasive species into and out of the Project site. Note: the Worker Environmental Awareness Program (WEAP) presentation shall not

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exceed 30 minutes.

A biologist should be consulted immediately if a dead or injured bird is found on site.

**Minimization Measures:**

A qualified biologist will complete an initial take avoidance survey between 14-30 days; and within 24 hours prior to ground disturbance activities using the recommended methods described in the Detection Surveys found in CDFW Staff Report (2012) section above. Implementation of avoidance and minimization measures would be triggered by positive BUOW presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls prior to vegetation removal or ground-disturbing activities. If burrowing owls are detected during the focused take avoidance preconstruction surveys, the qualified biologist and Project proponent shall prepare an Exclusion Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Plan shall describe proposed avoidance, monitoring, passive relocation, minimization, and/or mitigation actions. The Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Plan shall also describe minimization and compensatory mitigation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. The Plan shall identify compensatory mitigation for the temporary or permanent loss of occupied burrow(s) and habitat consistent with the "Mitigation Impacts" section of the 2012 CDFW's Staff Report on Burrowing Owl Mitigation and shall implement CDFW-approved mitigation prior to initiation of Project activities. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls. If no suitable habitat is available nearby, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls shall also be included in the Plan. The Project proponent shall implement the Plan following CDFW review and approval.

It is recommended to avoid direct or indirect impacts to BUOW, a preconstruction survey for this species should be conducted. If BUOW is present, mitigation will be required. Minimization measures could include preconstruction surveys within 14-30 days and 24 hours of start of groundbreaking activities and bilingual worker training.

Any adverse effects to 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 would be considered significant and require mitigation measures.

**Mitigation Measures:**

**BIO-1**

**Conduct Surveys for Special Status Plant Species.** As a requirement of an application for a renewable energy facility, surveys for special status plant species shall be conducted by qualified and agency-approved botanists to determine the presence or absence of sensitive plant species within the project footprint. Surveys shall be conducted following CDFW or BLM survey guidelines and be appropriately timed to coincide with the blooming periods for these species. Special status plants identified within the construction disturbance area shall be avoided to the extent feasible. A qualified botanist shall supervise the installation of orange construction fencing or other visible material to establish buffer zones between special status plants and construction disturbance.

**BIO-2**

**Conduct Surveys for Special Status Animal Species.** As a requirement of an application for a future renewable energy facility, surveys for special status animal species shall be conducted by qualified and agency-approved biologists to determine the presence or absence of sensitive animal species within the footprint of a future renewable energy project. Required surveys for special status animal species may include, but are not limited to, American badgers, burrowing owl, flat-tailed horned lizard, golden eagle, mountain plover, prairie falcons, Swainson's hawk, and Yuma Ridgway's rail, among others. Any special status mammal, reptile, and amphibian species detected during surveys shall be passively relocated to areas outside the construction zone and prevented from reentering the future project area with the installation of silt fencing or other exclusion fencing. All fencing shall be periodically monitored and maintained for the duration of construction. Passive relocation shall only be done in the nonbreeding season in accordance with guidelines and consultations with resource agencies. Depending on which special status species are present within the project boundaries, passive relocation measures may include covering or excavating all burrows or dens and installing one-way doors into occupied burrows. This would allow any animals inside to leave the burrow but would exclude any animals from reentering the burrow. The burrows shall then be excavated and filled in to prevent their reuse. Other types of relocation measures may be required, depending on which special status

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species are present within the project boundaries. If direct impacts to special status species cannot be avoided, an agency-approved biologist shall prepare a species-specific Mitigation and Monitoring Plan that would detail the approved, site-specific methodology proposed to minimize and mitigate impacts to each species. Passive relocation, destruction of burrows, construction of artificial burrows, etc. shall be completed only upon prior approval by and in cooperation with CDFW and/or USFWS.

**BIO-3**

**Mark Areas of Construction Boundaries.** All areas to be disturbed during construction of future renewable energy facilities developed under the proposed Project would be required to flag disturbance boundaries prior to construction. All disturbances would be confined to these flagged areas, and all employees would be instructed that their activities must be confined to locations within the flagged areas. Project proponents of future renewable energy facilities developed under the proposed Project would be required to have environmental monitors on site during construction activities.

**BIO-4**

**Power Wash Equipment Prior to Arrival on Site.** All construction equipment used during construction of future renewable energy facilities developed under the proposed Project would be required to be power washed prior to arrival at the future project site to prevent the transportation and establishment of noxious weeds in the project area.

**BIO-5**

**Implement a Worker Environmental Awareness Program.** A brief Worker Environmental Awareness Program (WEAP) would be implemented for construction crews prior to the commencement of project activities for future renewable energy facilities developed under the proposed Project. Training materials and briefings would include, but would not be limited to, discussion of the Federal and State ESAs, the consequences of noncompliance with these acts, identification and values of wildlife and natural plant communities, hazardous substance spill prevention and containment measures, and review of all required and recommended mitigation measures.

**BIO-6**

**Additional Project Mitigation.** Additional biological mitigation may be required based on the renewable energy technology to be developed at specific project locations. Project proponents for future renewable energy facilities would be required to evaluate how specific renewable energy facilities may impact sensitive species and how to mitigate impacts through site design and/or mitigation and monitoring activities.

**BIO-7**

**Develop a Habitat Restoration Plan and Provide for Offsite Mitigation for Temporary or Permanent Impacts.** As a requirement of an application for a future renewable energy facility, project proponents shall make an effort to minimize impacts on sensitive natural communities, especially riparian habitats, when designing and permitting projects in order to preserve both the habitat and the overall ecological functions of these areas. These efforts to minimize impacts on riparian habitats and other sensitive natural communities shall be done consistent with CDFW guidelines. Future project proponents shall minimize ground disturbance and construction footprints within and near such areas to the extent practicable. Where avoidance of these areas is not feasible, future project proponents shall arrange for offsite replacement of removed habitats in accordance with consultation with CDFW.

Prior to construction, future project proponents shall develop a Habitat Restoration Plan (HRP) for review and approval by CDFW and the County of Imperial. The HRP shall be prepared by a qualified biologist and/or botanist and shall detail the methods for restoring or enhancing any riparian habitats or other sensitive natural communities impacted within the project area. The goal of the HRP shall be to mitigate any temporary or permanent impacts to riparian habitats or other sensitive natural communities. Mitigation ratios would be developed through consultation with CDFW and the County of Imperial.

**BIO-8**

**Provide restoration/compensation for affected jurisdictional areas.** Impacts to areas under the jurisdiction of the USACE, RWQCB Regional Water Boards, State Water Board, and CDFW shall be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible, each applicant shall provide the necessary mitigation required as part of wetland permitting by creation/ restoration/preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional area mitigation. The location(s) of the mitigation would be determined in consultation with USACE, CDFW, RWQCB, and BLM as part of the wetland permitting process. A jurisdictional delineation and impact assessment shall be prepared for each site based on the final alignment and final engineering plans when they are complete. Mitigation ratios would be developed through consultation with the wetland permitting agencies. The width of

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wetland buffers would also depend on the sensitivity of the jurisdictional habitat and on the requirements of the wetland permitting agencies.

**BIO-9**

If occupied burrows are found on site, and if necessary, the burrows shall be passively relocated by a qualified biologist outside of nesting season and an appropriate number of artificial burrows shall be installed. If possible, these burrows shall be installed as close as possible to the passively relocated burrows. A Plan should be prepared to address activities and conservation efforts and submitted to CDFW.

**BIO-10**

If not in the active construction areas, the occupied burrows can be sheltered in place with appropriate materials under the supervision of a qualified biologist and accordance with the approved Plan.

**BIO-11**

If occupied burrows are sheltered, a biological monitor shall monitor areas of active construction; schedule to be determined by qualified biologist. This biologist will ensure that the project complies with these mitigation measures and will have the authority to halt activities if they are not in compliance. The biologist will inspect the construction areas periodically for the presence of BUOWs.

**BIO-12**

If work is stopped for longer than 30 days, the area will be resurveyed prior to restart of construction.

**BIO-13: Pre-Construction Survey**

A preconstruction survey should be carried out 14-30 days and 24 hours prior to initiating ground disturbance. The report should be submitted to the appropriate agencies but not limited to ICPDS. If necessary, an Exclusion Plan would be prepared with consultation with CDFW if BUOW are found on site after the initial preconstruction survey.

- 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) According to the U.S. Fish and Wildlife Service's National Wetlands Inventory: Surface Waters and Wetlands Map,<sup>11</sup> the proposed project site is not located within a riparian habitat. Additionally, as previously stated on section (IV)(a), although the Imperial County General Plan's Conservation and Open Space Element<sup>9</sup> and the California Department of Fish and Wildlife Lands Viewer<sup>9</sup> identifies a distribution model and predicted habitat for the Burrowing Owl within the proposed project area and its surroundings, the proposed project does not appear to have a substantial effect in local regional plans, policies, and regulations with respect to sensitive natural communities or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. However, according to the Biological Resources Assessment Report<sup>10</sup> prepared for this project, this minimally intrusive project should be allowed to proceed without additional breeding season protocol BUOW surveys and BUOW will be protected using avoidance, minimization and mitigations as listed on section (IV)(a). Any impacts are expected to be less than significant with mitigations incorporated as previously stated in section (IV)(a).**

- c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

**c) According to the U.S. Fish and Wildlife Service's National Wetlands Inventory: Surface Waters and Wetlands Map,<sup>11</sup> the closest body of water in the proximity is the Alamo River, approximately 400 feet from the drilling site; however, the proposed project does not anticipate any impacts to it. Additionally, according to the Biological Resources Assessment Report<sup>10</sup> prepared for this project, there are no wetlands or waters of the U.S. found on site; therefore this project will have no impact 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. There are no blue line washes found within influence of the project in the Niland Quadrangle map. Furthermore, according to the study, there are several drainage ditches (Vail Two Drain) and canal (Vail Lateral/Vail Lateral 2) in the vicinity that would not meet the criteria for wetlands by either the U.S. Army Corps of Engineers (USACE) or the California Department of Fish and Wildlife (CDFW); the habitat should not be considered jurisdictional by either agency. Any impacts are expected to be less than significant.**

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	Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
d) Interfere substantially with the movement of any 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? <b>d) There are no federal, state, or local parks or designated wildlife corridors or conservation areas on or adjacent to the subject property. According to the U.S. Fish &amp; Wildlife (USFWS) Critical Habitat for Threatened &amp; Endangered Species Mapper<sup>12</sup> and the California Department of Fish and Wildlife (CDFW) Lands Viewer<sup>9</sup>, there are no U.S. Fish and Wildlife designated critical habitat or Habitat Conservation Plan and no California Department of Fish and Wildlife (CDFW) Natural Community Conservation Plan at or adjacent to the proposed project site. Additionally, according to the Biological Resources Assessment Report<sup>10</sup> prepared for this project, the existing land has been used for the past fifty (50) plus years as agricultural. The site itself permits Agriculture through the County of Imperial and is not favorable to wildlife for the following reasons:</b> <ul style="list-style-type: none"> <li>• Currently planted to Bermuda which is highly equipment intensive – Bermuda is harvested every 4-6 weeks which involves cutting, raking, windrowing, baling and bale removal. Pesticides are applied, generally by ground periodically. Any nest in a Bermuda field is highly unlikely to succeed. Literature indicates that once a bird has a nest failure, they are not likely to return to that area to re-nest.</li> <li>• Prey opportunities (mice, insects) are not reliable due to constant disruption of the site. Food Safety guidelines require that rodents and birds be controlled to prevent E. Coli contamination.</li> <li>• These agricultural areas can actually be detrimental to wildlife. A recent study indicates that birds found in agricultural lands are more vulnerable to extreme heat and also states that intense commercial farming is known to harm birds. Fields completely clear of trees and other natural barriers lack shelter for wildlife; pesticides and other agricultural chemicals can hurt birds.</li> </ul> <b>The project will not interfere substantially with the currently restricted 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. Industry, commercial and residential areas surround the area and currently fragmented access and as a result, restrict wildlife and nursery sites. No concentrated wildlife movement, aerially or ground based, or nursery sites were observed while biologists were on site; therefore, any impact would be less than significant.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinance protecting biological resource, such as a tree preservation policy or ordinance? <b>e) The proposed exploration wells aim to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. The proposed project would not conflict with any local policy or ordinance protecting biological resources, such as tree preservation policies or ordinances. Additionally, there are no trees on site to support nesting. Any impacts would be less than significant by implementing mitigation measures listed in section (IV)(a).</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? <b>f) As previously stated, although the Imperial County General Plan's Conservation and Open Space Element,<sup>8</sup> Figure 2 - "Sensitive Species Map,<sup>8a</sup>" and the California Department of Fish and Wildlife Lands Viewer<sup>19</sup> identifies a distribution model and predicted habitat for the Burrowing Owl within the proposed project area and its surroundings, the proposed project area is not located within an area that is subject to a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. As previously stated, any impacts would be less than significant by implementing mitigation measures listed in section (IV)(a).</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

V. **CULTURAL RESOURCES** *Would the project:*

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? <b>a) According to the Imperial County General Plan's Conservation and Open Space Element,<sup>8</sup> Figure 5 - "Areas of Heightened Historic Period Sensitivity Map<sup>8d</sup>," the proposed project site may be located between, but not within the John G. Parke and Mission Road Exploration and Trail Routes (1770-1890). Additionally, in accordance to Figure 6 - "Known Areas of Native American Cultural Sensitivity,<sup>8e</sup>" the proposed project site is not located within the immediate vicinity of a known area of cultural sensitivity to Native Americans. Furthermore, on October 25, 2024, the County sent Assembly Bill 52 consultation letters to the Quechan and Campo Band of Mission Indian Tribes in reference to the proposed geothermal exploration project with a no comments email received from the Quechan Tribe<sup>13</sup> on December 12, 2024. Any impact is expected to be less than</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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significant.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?      
**b) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area and does not anticipate causing a substantial adverse change to any archeological resource. Additionally, as previously mentioned on item (V)(a), on October 25, 2024, the County sent Assembly Bill 52 consultation letters to the Quechan and Campo Band of Mission Indian Tribes in reference to the proposed project with a no comments email received from the Quechan Tribe<sup>13</sup> on December 12, 2024. Any impacts are expected to be less than significant.**
- c) Disturb any human remains, including those interred outside of dedicated cemeteries?      
**c) The proposed project site is not located within or adjacent to the vicinity of any cemeteries; therefore, the proposed project would not disturb any human remains, including those interred outside of dedicated cemeteries. Less than significant impacts are expected.**

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) The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development and which does not include nor contemplate the wasteful, inefficient, or unnecessary consumption of energy resources. Additionally, per comment letter received from the Imperial Irrigation District<sup>14</sup> dated November 7, 2024, electrical capacity is limited in the project area and a circuit study may be required. Any system improvements or mitigation identified in the circuit study to enable the provision of electrical service to the project shall be the financial responsibility of the applicant. Also, if and when the project needs electrical service, the applicant should be advised to contact IID. Adherence to IID's standards, regulations, and recommendations would bring any impacts to less than significant.**
- b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?      
**b) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Additionally, as previously mentioned on item (VI)(a), the applicant would adhere and comply with IID's standards, regulations, and recommendations. Any impacts are expected to be less than significant.**

VII. **GEOLOGY AND SOILS** *Would the project:*

- a) Directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving:      
**a) The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development. Although the latest Alquist-Priolo Earthquake Fault Zoning Map from the California Geological Survey Hazard Program,<sup>15</sup> California Department of Conservation Fault Activity Map,<sup>16</sup> United States Geological Survey's Quaternary Faults Map,<sup>17</sup> and Imperial County Seismic and Public Safety Element Figure 2 - "Regional Fault Lines,<sup>18a</sup>" identify the Brawley Seismic Zone and Kalin fault at approximately 1.5 miles west of the proposed project site, any new development would be subjected to compliance with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review. Adherence and compliance with these standards and regulations would bring any impact to less than significant levels.**
- 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?

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Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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1) As previously stated under item (VII)(a) above, although the latest Alquist-Priolo Earthquake Fault Zoning Map from the California Geological Survey Hazard Program,<sup>15</sup> California Department of Conservation Fault Activity Map,<sup>16</sup> United States Geological Survey's Quaternary Faults Map,<sup>17</sup> and Imperial County Seismic and Public Safety Element Figure 2 - "Regional Fault Lines,<sup>18a</sup>" identify the Brawley Seismic Zone and Kalin fault at approximately 1.5 miles west of the proposed project site, any new development would be subjected to compliance with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review. Adherence and compliance with these standards and regulations would bring any impact to less than significant levels.

- 2) Strong Seismic ground shaking?
- 2) The proposed project site is located in the seismically active Imperial Valley of southern California with numerous mapped faults traversing the region including the San Andreas, San Jacinto, and Elsinore Fault Zones in southern California.<sup>19</sup> According to the latest version of the California Building Code<sup>19</sup> Section 1613 et. seq., Imperial Valley is classified as Seismic Zone D, which requires any development within this zone to incorporate the most stringent earthquake resistant measures.

As previously mentioned in sections (VII)(a) and (VII)(a)(1), any new development would be subjected to comply with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review. Adherence and compliance with these standards and regulations would bring any impact to less than significant levels.

- 3) Seismic-related ground failure, including liquefaction and seiche/tsunami?
- 3) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area and is not located within a seiche/tsunami area per the California Tsunami Hazard Area Map.<sup>20</sup> Additionally, the site is located approximately 3 miles southeast of the Salton Sea and the threat of tsunami or seiches is considered low<sup>x1</sup>. Although liquefaction occurs when granular soil below the water table is subjected to vibratory motions, such as produced by earthquakes and considered moderate to high at the project site according to the Geologic and Geotechnical Hazard Report<sup>21</sup> prepared for this project, as previously stated in sections (VII)(a) and (VII)(a)(1), any development would be subjected to comply with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review. Adherence and compliance with these standards and regulations would bring any impact to less than significant levels.

- 4) Landslides?
- 4) According to Imperial County General Plan's Seismic and Public Safety Element,<sup>18</sup> "Landslide Susceptibility<sup>18b</sup>". Figure 3 and the California Geological Survey Landslide Map,<sup>22</sup> the proposed project site is not located within the immediate vicinity of a landslide activity area. The hazard of land sliding is unlikely due to the regional planar topography; however, any new future development would be subject to compliance with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review with the County. Therefore, less than significant impacts are expected.

- b) Result in substantial soil erosion or the loss of topsoil?
- b) According to Imperial County General Plan's Seismic and Public Safety Element,<sup>18</sup> Erosion (page 15), areas in Imperial County that are most susceptible to erosion include the Algodones Sand Dunes, as well as the Chocolate, Picacho, Cargo Muchacho, and Coast Range Mountains. The proposed project is not located within the immediate vicinity of a substantial soil erosion area. Any impacts are expected to be less than significant.

- 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 landslides, lateral spreading, subsidence, liquefaction or collapse?
- c) As previously discussed in sections (VII)(3) and (VII)(4), the proposed project's risk for on- or off-site landslide, lateral spreading, subsidence, or collapse are expected to be less than significant. Additionally, any new future developments would be subjected to compliance with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review. Adherence and compliance with these standards and regulations would bring any impact to less than significant levels.

- d) Be located on expansive soil, as defined in the latest Uniform Building Code, creating substantial direct or indirect risk to life or property?
- d) Although according to the U.S. Department of Agriculture Soils Map<sup>23</sup> and the University of California Agriculture and Natural Resources SoilWeb Map,<sup>24</sup> the geothermal exploration project site is located near Imperial Silty Clay and Imperial

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Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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Glenbar soils which are considered moderately well and poorly drained, respectively, the proposed project would not substantially create a direct or indirect risk to life or property. Additionally, as previously discussed in item (VII)(4)(c), any new future developments would be subjected to compliance with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review. Adherence and compliance with these standards and regulations would bring any impact to less than significant levels.

- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?
- e) No septic system and leach field are proposed as part of the project; therefore, any impacts are expected to be less than significant.
- f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- f) The proposed project site is surrounded by already disturbed agricultural lands and does not appear to directly or indirectly destroy a unique paleontological resource or site of unique geologic feature on site as there are no known unique resources or features on site or records of. Additionally, during drilling operations, in the event of any paleontological findings on site during construction, if excavation or drilling activities greater than 10 feet in depth below ground surface, all work shall be stopped, and the Imperial Valley Desert Museum shall be contacted to have a qualified specialist inspect and monitor the site. Any impacts are expected to be less than significant, with mitigations.

Mitigation Measures:

In order to minimize geology and soil impacts, the following measures shall be implemented:

**GEO-1: Develop and Implement a Storm Water Pollution Prevention Plan (SWPPP).** Future renewable energy facilities developed under the proposed Project would require a detailed SWPPP to be developed and implemented to minimize erosion during construction in compliance with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit. The SWPPP would be required to include the following:

- A detailed description of all Best Management Practices (BMPs) that will be employed
- An outline of the areas on site that will be disturbed during construction of the project
- An outline of all areas that will be stabilized by temporary or long-term erosion control measures
- A proposed schedule for the implementation of erosion control measures

In addition, all surface water and drainage features within 1,000 feet of construction activities shall be identified. Construction activities within 100 feet of these resources shall implement the BMPs detailed in the SWPPP prepared for each project.

**GEO-2: Implement Corrosion Protection Measures.** As determined appropriate by a licensed geotechnical or civil engineer, each project proponent shall ensure that all underground metallic fittings, appurtenances, and piping located in corrosive soils include a cathodic protection system to protect these facilities from corrosion for future renewable energy facilities developed under the proposed Project.

**GEO-3: Demonstrate Compliance with On-Site Wastewater Treatment and Disposal Requirements.** Wastewater treatment and disposal system(s) associated with future renewable energy facilities shall demonstrate compliance with the Imperial County performance standards as outlined in Title 9, Division 10, Chapters 4 and 12 of the Imperial County Land Use Ordinance. Prior to construction, and again prior to operation, each future project proponent would be required to obtain all necessary permits and/or approvals from Imperial County. Each future project proponent would be required to demonstrate that the system adequately meets County requirements, which have been designed to protect beneficial uses and ensure that applicable water quality standards are not violated. This shall include documentation that the system would not conflict with the Regional Water Quality Control Board's (RWQCB) Anti-Degradation Policy.

VIII. **GREENHOUSE GAS EMISSION** *Would the project:*

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

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Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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a) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area which does not anticipate nor expect the generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Additionally, as previously stated in Category (III) above, per Imperial County Air Pollution Control District's comment letter<sup>7</sup> dated November 7, 2024, the Air District informs the applicant that the wells will require an Air District permit and requests the applicant to apply for engineering review of the project prior to beginning construction of the project. The project packet identifies that the drilling equipment will be permitted under the California Air Resources Board's (CARB) Portable Engine Registration Program (PERP). The Air District requests to be notified when the equipment will be on site for operation and requests a copy of the PERP registration be shared with the Air District. In the event the equipment is not PERP certified, an application for engineering review of the equipment should be submitted to determine the permitting requirements. The Air District also reminds the applicant that the project must comply with all Air District Rules & Regulations and would emphasize Regulation VIII – Fugitive Dust Rules, a collection of rules designed to maintain fugitive dust emissions below 20% visual opacity. Finally, the Air District requests a copy of the draft CUP prior to recordation for review. Adherence and compliance with APCD's rules and regulations will bring any impact to less than significant.

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

b) The proposed project would not conflict with any regulations under AB 32 Global Warming Solutions Act of 2006, of reducing the emissions of greenhouse gases to 1990 levels by 2020 provided that the applicant adheres to APCD's regulations. Less than significant impacts are expected.

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) The proposed geothermal exploration project does not expect to create a significant hazard to the public or the environment as it does not involve the handling of any hazardous materials. Less than significant impacts are expected.

b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

b) The proposed geothermal exploration project does not expect to create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment as no hazardous materials are anticipated as part of the project. Additionally, as previously stated in section (VIII)(a) above, the proposed project would comply with the Air District's rules and regulations. Any impacts are expected to be less than significant.

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) The proposed project does not anticipate the emitting of hazardous emissions, or the handling of hazardous or acutely hazardous materials, substances, or waste as previously stated on items (IX)(a) and (IX)(b) above. Additionally, the project site is not located within a ¼ mile of any schools. The nearest school in the vicinity is the Calipatria High School in the City of Calipatria, CA, located approximately 3.5 miles southeast of the proposed project site; therefore, it would not represent a risk to educational facilities. Less than significant impacts are expected.

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) The proposed project is not located on a site included on a list of hazardous materials sites according to California Department of Toxic Substances Control EnviroStor<sup>25</sup> or within any of the listed facilities/sites from page 35 of the Imperial County General Plan: Seismic and Public Safety Element<sup>18</sup>; therefore, less than significant impacts are expected.

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

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Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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hazard or excessive noise for people residing or working in the project area?

**e) The proposed geothermal exploration project is not located within an airport land use plan per Imperial County Airport Land Use Compatibility Maps.<sup>26</sup> The nearest airport in the area is the Calipatria Municipal Airport located approximately 3.4 miles southeast of the project site; therefore, it would not result or create a significant hazard or excessive noise for people residing or working in the project area. No impacts are expected.**

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

**f) The proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. Additionally, the Applicant would meet any further requirements imposed by the Imperial County Fire/OES Department. Adherence to ICFD standards and recommendations should bring any impact to less than significant.**

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

**g) According to CalFire's "Fire Hazard Severity Zones in Local Responsibility Areas - Imperia County Map<sup>27</sup>" effective April 1, 2024, the proposed project site is designated as Local Responsibility Area (LRA) Unzoned; therefore, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildfires. Additionally, as previously discussed in section (IX)(f), the applicant would meet any requirements as set forth by the Imperial County Fire/OES Department. Compliance with the Imperial County Fire Department (ICFD) standards, requirements, and recommendations would bring any impact to less than significant, with mitigations.**

**Mitigation Measure:**

**HAZ-1: Proponents of future renewable energy facilities developed under the proposed Project that would handle hazardous materials that exceed regulatory thresholds would need to prepare and submit a Business Emergency Response Plan for approval to the State Department of Toxic Substance Control and County of Imperial Local Enforcement Agency.**

**X. HYDROLOGY AND WATER QUALITY Would the project:**

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

**a) The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Additionally, as per the comment letter received from the Imperial Irrigation District<sup>14</sup> dated November 7, 2024, for construction projects larger than one (1) acre to discharge into IID water drains, the applicant must submit a Notice of Intent to the California Regional Water Quality Control Board and prepare a Storm Water Pollution Prevention Plan for storm water management during construction. If the project includes dewatering activities, adequate details must be included in the Storm Water Pollution Prevention Plan to delineate this purpose. Adherence to IID's standards and requirements would bring any impact to 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) As previously stated on item (X)(a) above, the proposed geothermal exploration project does not expect to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Less than significant impacts are expected.**

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:

**c) The proposed project does not propose to alter the existing drainage of the site or area. Although the closest body of water in the proximity is the Alamo River, approximately 400 feet from the drilling site, the proposed project does not anticipate a physical alteration to the site that would 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. Per comment letter received from the Imperial Irrigation District<sup>14</sup> dated November 7, 2024, an IID encroachment permit is required to utilize existing**

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Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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surface-water drainpipe connections to drains and receive drainage service from IID. Surface-water drainpipe connections are to be modified in accordance with IID Water Department Standards. Additionally, per comment letter received from the Imperial County Department of Public Works<sup>28</sup> dated November 20, 2024, the Applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Adherence to IID and Public Works requirements and recommendations would bring any impact to less than significant.

(i) result in substantial erosion or siltation on- or off-site;

(i) According to Imperial County General Plan's Seismic and Public Safety Element,<sup>18</sup> Erosion (page 15), areas in Imperial County that are most susceptible to erosion include the Algodones Sand Dunes, as well as the Chocolate, Picacho, Cargo Muchacho, and Coast Range Mountains. The proposed project site is not located within these areas. Additionally, as previously stated in section (X)(c) above, the Applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Therefore, adherence to ICDPW's standards and requirements would bring any impact to less than significant.

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

(ii) The proposed project is not expected to substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite as the existing drainage patterns would not be substantially altered. Also, as previously stated on section (X)(c) above, the Applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Compliance with the Imperial County Department of Public Works requirements would bring any impact to less than significant.

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

(iii) As previously stated on items (X)(c) and (X)(c)(ii) above, any proposed grading or planned stormwater drainage systems will require drainage application, review, and approval from the Imperial County Public Works Department. As previously stated in section (X)(a) above, for construction projects larger than one (1) acre to discharge into IID water drains, the applicant must submit a Notice of Intent to the California Regional Water Quality Control Board and prepare a Storm Water Pollution Prevention Plan for storm water management during construction. Additionally, a construction storm-water permit from the California Regional Water Quality Control Board is required before commencing construction and an industrial storm water permit from CRWQCB is required for the operation of the proposed facility. The project's Storm Water Pollution Prevention Plan and the storm-water permits are to be submitted to IID. Furthermore, any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any above ground or underground utilities; will require an encroachment permit, or encroachment agreement. In addition, as previously stated in section (X)(c) above, the Applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Compliance with Imperial County Public Works Department and Imperial Irrigation District standards and requirements would ensure that any runoff water impacts would be reduced to less than significant levels.

(iv) impede or redirect flood flows?

(iv) Although according to the Federal Emergency Management Agency (FEMA) Flood Map Service Center,<sup>29</sup> Flood Insurance Rate Map, flood map 06025C0725C, effective September 26, 2008, and the Imperial County General Plan's Seismic and Public Safety Element<sup>18</sup> Figure 4 – "Flood Hazard Zones,"<sup>18c</sup> the proposed project site is located within "Zone A," areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. As per the comment letter received from the Imperial County Department of Public Works<sup>28</sup> dated November 20, 2024, the applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. The proposed project shall also comply with the Imperial County's Land Use Ordinance Title 9 Division 16 Chapter 5 requirements. As result, the proposed project would not impede or redirect flood flows. Therefore, compliance with ICPWD's standards and County's Land Use Ordinance would bring any impact to be less than significant.

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

d) The communities of Bombay Beach and Ocotillo are the most likely to experience significant flooding in the County.<sup>19</sup> **FFC ORIGINAL FRG**

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proposed project site is located approximately 4 miles northwest of the city of Calipatria, not within the vicinities of Bombay Beach or Ocotillo. Additionally, according to California Tsunami Data Map,<sup>20</sup> the proposed project site is not located within a tsunami zone. Furthermore, as previously discussed in item (X)(c)(iv) above, the Imperial County Department of Public Works shall require the applicant to furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Therefore, risk release of pollutants due to project inundation is considered low. Compliance with ICDPW's standards and recommendations would bring any impact to be less than significant.

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

e) As previously stated on item (X)(c)(ii) above, the proposed project would require a grading letter approved by the Imperial County Department of Public Works. Additionally, as previously stated in section (X)(a) above, for construction projects larger than one (1) acre to discharge into IID water drains, the applicant must submit a Notice of Intent to the California Regional Water Quality Control Board and prepare a Storm Water Pollution Prevention Plan for storm water management during construction. A construction storm-water permit from the California Regional Water Quality Control Board is required before commencing construction and an industrial storm water permit from CRWQCB is required for the operation of the proposed facility. The project's Storm Water Pollution Prevention Plan and the storm-water permits are to be submitted to IID. Therefore, it is not expected that the proposed project would conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. Adherence to ICDPW and IID standards, requirements, and recommendations would bring any impact to less than significant, with mitigations.

Mitigation Measures:

In order to minimize impacts, the following measures shall be implemented:

HYDRO-1: Acquire Appropriate CWA Regulatory Permits, Prepare SWPPP, and Implement BMPs Prior to Construction and Site Restoration. Project proponents or project construction contractors for future renewable energy facilities would be required to prepare a project-specific SWPPP and be responsible for securing coverage under SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by each project applicant prior to commencement of work and shall be made conditions of the contract with each contractor selected to build and decommission future renewable energy facilities developed under the proposed Project. The SWPPP(s) shall, at a minimum, incorporate control measures in the following categories:

- Soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching)
- Dewatering and/or flow diversion practices, if required (see Mitigation Measure HYDRO-2)
- Sediment control practices (temporary sediment basins, fiber rolls)
- Temporary and postconstruction on-site and off-site runoff controls
- Special considerations and BMPs for water crossings, wetlands, and drainages
- Monitoring protocols for discharge(s) and receiving waters, with emphasis placed on the following water quality objectives: dissolved oxygen, floating material, oil and grease, pH, and turbidity
- Waste management, handling, and disposal control practices
- Corrective action and spill contingency measures
- Agency and responsible party contact information
- Training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP

Each SWPPP shall be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and that represents the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Given that Imperial Valley Drains would accept runoff from areas within the Salton Trough and are listed as impaired for sediment, the SWPPP shall include BMPs sufficient for Risk Level 2 projects. BMPs for soil stabilization and erosion control practices and sediment control practices would also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by

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actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) is required to determine adequacy of the measure.

**HYDRO-2: Properly Dispose of Construction Dewatering in Accordance with the Colorado River Basin Regional Water Quality Control Board.** If required, all construction dewatering for future renewable energy facilities developed under the proposed Project shall be discharged to an approved land disposal area or drainage facility in accordance with Colorado River Basin RWCQB requirements. Each future project proponent or project construction contractor shall provide the Colorado River Basin RWQCB with the location, type of discharge, and methods of treatment and monitoring for all groundwater dewatering discharges. Emphasis shall be placed on those discharges that would occur directly or in proximity to surface water bodies and drainage facilities.

**HYDRO-3: Comprehensive Drainage and Sedimentation Control Plan.** Project proponents for future renewable energy facilities would be required to prepare a Comprehensive Drainage and Sedimentation Plan (Plan) prior to the initiation of construction (or decommissioning as relevant). Detailed hydrologic analysis shall be performed prior to final design of the specific future renewable energy project. Results of these analyses will be submitted to the County for review. All proposed grading and impervious surfaces on-site shall be reviewed and approved by the County with respect to its potential to cause or result in additional erosion and sedimentation, increased stormwater flows, or altered drainage patterns that could lead to unintentional ponding or flooding on-site or downstream, and/or additional erosion and sedimentation. The Plan shall include, but not be limited to, the following measures:

- Construction of access corridors and temporary and permanent access roads shall not block existing drainage channels and shall not significantly alter the existing topography.
- The project proponent shall delineate the active drainage channels within each drainage avoidance area and avoid placement of proposed flood protection berms within active drainage channels. The drainage avoidance areas shall protect no less than 90 percent of the area of the active drainage channels from construction impacts.
- The project proponent shall prepare hydraulic analyses that estimate the pre- and post-Conclusions.

**XI. LAND USE AND PLANNING** *Would the project:*

- a) Physically divide an established community?
- a) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area and would not physically divide an established community. Per County's Land Use Ordinance (Title 9), Division 5, Section 90509.02, Subsection (bb), Geothermal Test Facilities meeting the requirements in Division 17 are allowed in an A-3 (Heavy Agricultural) zone with an approved Conditional Use Permit (CUP). Additionally, per Division 17 (Renewable Energy Resources), Section 91703.04, Subsection B, Geothermal Test Facilities may be permitted in any zone by the Planning Commission. Also, per Imperial County's Renewable Energy and Transmission Element, Appendix B (Geothermal Resources Development Regulation), Subsection (A)(2) – County Land Use Review, Exploratory, test, and production projects are approved by conditional use permit (also referred to as a geothermal permit), which is a land use permit. The permit does not authorize a person or corporation to drill a well or build a plant, but it does authorize a specific parcel of land to have wells drilled or to have plants built upon it. Therefore, the proposed geothermal exploration project does not anticipate changing the existing land use designation and zoning established. No land use or planning impacts are expected.
- 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) As previously stated on item (XI)(a) above, the proposed project is consistent with the Imperial County General Plan and Land Use Ordinance (Title 9), Divisions 5 and 17 and with the Imperial County's Renewable Energy and Transmission Element<sup>30</sup> of the General Plan and would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impacts are expected.

**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) The proposed project is for the drilling of up to two (2) geothermal exploration wells which aims for the testing and

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evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area. Although the proposed project anticipates the removal of geothermal mineral resources, and it is not located within the boundaries of an active mine per Imperial County General Plan's Conservation and Open Space Element<sup>8</sup>, Figure 8 - "Existing Mineral Resources Map."<sup>8g</sup> Additionally, per comment letter received from the California Geologic Energy Management Division (CalGEM)<sup>31</sup> dated November 8, 2024, if the exploration wells are reworked between completion of drilling operations and their plugging and abandonment, a rework permit may be required from CalGEM in accordance with requirements in the PRC based on the type of well work proposed. Any impacts are expected to be less than significant.

- 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) The proposed geothermal exploration project will not result in the loss of availability of locally-important mineral resources recovery site delineated on a local general plan, specific plan or other land use plan. Additionally, as previously stated on section (XII)(a), the proposed project is not located within the boundaries of an active mine per Imperial County General Plan's Conservation and Open Space Element,<sup>8</sup> Figure 8 - "Existing Mineral Resources Map."<sup>8g</sup> Any impacts are expected to be less than significant.**

**XIII. NOISE Would the project result in:**

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

**a) Drilling operations for the proposed geothermal exploration wells would take place 24 hours per day, 7 days per week until the adequate and total depth is reached. However, drilling operations would be subjected to the Imperial County General Plan's Noise Element<sup>32</sup> which states that construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and from 9 a.m. to 5 p.m. on Saturday. Additionally, construction noise from a single piece of equipment or combination, shall not exceed 75 dB Leq when averaged over an eight (8) hour period. Compliance with the Imperial County General Plan's Noise Element would bring any impacts to less than significant.**

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

**b) As previously discussed in item (XIII)(a), drilling operations would be subjected to the Imperial County General Plan's Noise Element,<sup>32</sup> therefore, the generation of excessive groundborne vibration or groundborne noise levels would be low to the nearest receivers. Adherence to the Imperial County General Plan's Noise Element would bring any impact to less than significant.**

- 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) As previously stated on section (IX)(e) above, the proposed geothermal exploration project is not located within the vicinity of a private airstrip or an airport land use plan per Imperial County Airport Land Use Compatibility Maps.<sup>26</sup> The nearest airport in the area is the Calipatria Municipal Airport located approximately 3.4 miles southeast of the project site; therefore, the proposed project would not expose people residing or working in the project area to exceed noise levels. Additionally, as previously stated on section (XIII)(b), would be subjected to the Imperial County General Plan's Noise Element.<sup>32</sup> Less than significant impacts are expected, with mitigations.**

**Mitigation Measures:**

**NOI-1: Implement noise reduction techniques. Project proponents developing future renewable energy facilities shall implement the following requirements:**

- Limit noisy construction activities (including but not limited to truck and rail deliveries, pile driving, and blasting) to the least noise-sensitive times of day consistent with the requirements of the County of Imperial Noise Ordinance.
- Consider use of noise barriers such as berms and vegetation to limit ambient noise at plant property lines, especially where noise-sensitive receptors may be present.

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- Ensure all project equipment has the appropriate sound-control devices and shield-impact tools. Use battery-powered forklifts and other facility vehicles and flashing lights instead of audible backup alarms on mobile equipment.
- Locate stationary construction equipment (such as compressors and generators) as far as practical from nearby residences.
- If blasting or other noisy activities are required during the construction period, notify nearby residents and the permitting agencies 24 hours in advance.
- Properly maintain mufflers, brakes, and all loose items on construction and operation-related vehicles to minimize noise and ensure safe operations. Operate trucks as quietly as possible, while considering local conditions. Advise about downshifting and vehicle operations in residential communities to keep truck noise to a minimum.
- Install mufflers on diesel and gas-driven engine air coolers and exhaust stacks. Equip emergency pressure relief valves and steam blow-down lines with silencers to limit noise levels.
- Contain project facilities within buildings or other types of effective noise enclosures, when necessary and feasible.
- Employ engineering controls, including sound-insulated equipment and control rooms, to reduce the average noise level to appropriate levels in normal work areas.

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 business) or indirectly (for example, through extension of roads or other infrastructure)?

**a) The proposed project consists of two exploration geothermal wells intended to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development and would not induce a substantial unplanned population growth in an area, either directly or indirectly, as no changes to the existing agricultural uses are proposed. Therefore, any impacts are expected to be less than significant.**

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

**b) As previously stated in section (XIV)(a) above, the proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development and would not displace substantial numbers of people necessitating the construction or replacement housing elsewhere as the existing agricultural designation on the subject parcel is proposed to remain. Any impacts are expected to be less than significant.**

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 of the public services:

**a) The proposed project consists of two exploration geothermal wells intended to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use. Should the exploration program be successful and the data indicate viable resource development, the exploration wells will transition into the permitting phase for full scale field development as**

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geothermal extraction/return injection wells; therefore, the proposed project does not anticipate that the proposed project would result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios. Any impact would be less than significant.

1) Fire Protection?

1) The proposed project is not expected to result in substantial impacts on fire protection. The geothermal exploration wells are considered temporary but should the exploration program be successful and the data indicate viable resource development, the exploration wells will transition into the permitting phase for full-scale field development as geothermal extraction/return injection wells. If the program is unsuccessful, the exploration wells will be plugged and abandoned in accordance with California Division of Oil, Gas, and Geothermal Resources (CDOGGR) requirements. For any major and future development, the Applicant would meet and adhere to the Imperial County Fire/OES Department and IID's standards, requirements, and recommendations. Less than significant impacts are expected. Compliance and adherence with ICFD standards and requirements would bring any impact to less than significant.

2) Police Protection?

2) The proposed project is not expected to result in substantial impacts on police protection. Should any police protection be required, both the California Highway Patrol and Sheriff's Office North County Patrol<sup>33</sup> have active policing and patrol operations in the area. Any impacts are expected to be less than significant.

3) Schools?

3) The proposed project is not expected to have a substantial impact on schools. Additionally, as previously stated in section (IX)(c) above, the closest school within the vicinity is the Calipatria High School within the City of Calipatria, which is approximately 3.5 miles southeast of the proposed project site. No impacts are expected.

4) Parks?

4) The proposed project is not expected to create a substantial impact on parks. No impacts are expected.

5) Other Public Facilities?

5) The proposed geothermal exploration project is not expected to have a substantial impact on other public facilities. Per IID's comment letter<sup>14</sup> dated November 7, 2024, IID water facilities that could be impacted include the Vail Lateral 1, Vail Lateral 2, Vail 2 Drain, and Vail 2A Drain. The applicant may not use IID canals or drain banks to access proposed well sites. In the event that the exploration wells become permanent, ground subsidence may impact IID water facilities. The applicant should contact IID Water Department Engineering Services for monitoring and mitigation of impacts from these wells. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit or encroachment agreement (depending on the circumstances). An IID encroachment permit is required to utilize existing surface-water drainpipe connections to drains and receive drainage service from IID. Surface-water drainpipe connections are to be modified in accordance with IID Water Department Standards. Furthermore, any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, water deliveries, canals, drains, etc.) need to be included as part of the Project.

Subsequently, as per the comment letter received from the Department of Public Works<sup>28</sup> dated November 20, 2024, the Developer shall repair any damage caused to County roads during construction and maintain such roads in safe conditions as determined by the Imperial County Road Commissioner. Street improvements are required per Imperial County Ordinance 12.10.020 including commercial driveway from Kalin Road. Said road repairs shall be completed under an encroachment permit. All off-site improvements within Imperial County right-of-way shall be financially secured by either a road improvement bond or letter of credit as approved by the Imperial County Department of Public Works. No encroachment, building, or grading permits shall be issued until such time said financial security has been provided. All permanent structures abutting public roads shall be located outside the County right-of-way, public utility easements, and drainage easements. All on-site areas shall be hard surfaced to provide all weather access for emergency vehicles. The surfacing shall meet the Department of Public Works and Fire/Office of Emergency Services (EOS) standards as well as those of the Air Pollution Control District (APCD). Lastly, construction traffic will access the site using either SR-78/86 from the south, SR-111 from the east, or both State routes before using County roads in the area. These County roads have bridges with limited load ratings with a few of them under legal load. The County road bridge ratings range from 62,000 lbs. to 197,000 lbs. The limited load ratings of the County bridges in the area have the potential to limit or even restrict construction access. The route to be identified on the haul route study shall also take into account bridge load capacities versus the approximate weight of anticipated truck/transport loads and equipment.

Adherence to IID and Public Works requirements and recommendations would bring any impact to less than significant.

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**XVI. RECREATION**

- a) Would the project increase the use of the existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- a) The proposed project consists of two exploration geothermal wells intended to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development. Additionally, there are no existing neighborhoods or regional parks within the proposed project area. The City of Calipatria is located approximately 4 miles southeast of the proposed project site; therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. No impacts are expected.**
- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment?
- b) The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment. Also, as previously stated on item (XVI)(a), there are no regional parks within the proposed project area; therefore, no impacts are expected.**

**XVII. TRANSPORTATION** *Would the project:*

- a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- a) The proposed project does not anticipate nor expect any conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. The geothermal exploration project is not expected to create a substantial impact to surrounding roads nor conflicting with Imperial County General Plan's Circulation and Scenic Highway Element.<sup>1</sup> Additionally, per comment letter received from the Department of Public Works,<sup>28</sup> a transportation permit may be required from the road agencies having jurisdiction over the haul routes for any hauls of heavy equipment and/or large vehicles which impose greater than legal loads on riding surfaces, including bridges. (Per Imperial County Code of Ordinances, Chapter 10.12 – Overweight Vehicles and Loads). The Applicant shall prepare and submit a haul route study identifying a construction route along County roads from State routes to the site. The haul route study shall evaluate any impact due to construction traffic to County roads. Said study shall be submitted to the Department of Public Works for review and approval. The haul study route shall include pictures and/or other documents to verify the existing conditions of the impacted County roads before construction begins. The haul route study shall also include recommended mitigation improvements to impacted County roads along with any fair share costs for such improvements. Construction engineering cost estimates shall be included with the study. Lastly, the Applicant shall enter into a Roadway Maintenance Agreement with the County of Imperial prior to the issuance of a Certificate of Occupancy. The Applicant shall provide financial security to maintain the roads on the approved haul route study during construction.**

**Adherence to Public Works requirements and recommendations would bring any impact to less than significant.**

- b) Would the project conflict or be inconsistent with the CEQA Guidelines section 15064.3, subdivision (b)?
- b) The proposed project would not conflict or be inconsistent with the CEQA Guidelines section 15064.3, subdivision (b) as it is not expected to have a significant transportation impact within transit priority areas with no proposed change on the existing land use. Additionally, as previously stated in section (XVII)(a) above, the applicant should comply with any requirements and conditions set forth by the Imperial County Department of Public Works and Caltrans. Less than significant impacts are expected.**
- c) Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- c) The proposed project site is zoned as A-3-G (Heavy Agricultural with a Geothermal Overlay) Per County's Land Use**

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Ordinance (Title 9), Division 5, Section 90509.02, Subsection (bb), Geothermal Test Facilities meeting the requirements in Division 17 are allowed in an A-3 (Heavy Agricultural) zone with an approved Conditional Use Permit (CUP). Additionally, per Division 17 (Renewable Energy Resources), Section 91703.04, Subsection B, Geothermal Test Facilities may be permitted in any zone by the Planning Commission. Also, per Imperial County’s Renewable Energy and Transmission Element, Appendix B (Geothermal Resources Development Regulation), Subsection (A)(2) – County Land Use Review, exploratory, test, and production projects are approved by conditional use permit (also referred to as a geothermal permit), which is a land use permit. The permit does not authorize a person or corporation to drill a well or build a plant, but it does authorize a specific parcel of land to have wells drilled or to have plants built upon it. The site’s design would not substantially increase hazards due to a geometric design feature or compatible uses; therefore, any impacts are expected to be less than significant.

- d) Result in inadequate emergency access?
- d) The proposed project would not result in inadequate emergency access. Additionally, no change on existing land use nor zoning are proposed. The proposed access appears to be suitable for emergency response vehicles. Should any improvements be required or necessary, such would comply with Imperial County Fire Department’s standards. Less than significant impacts are expected, with mitigations.

**Mitigation Measures:**

**TRA-1: Implement A Transportation Plan.** Project proponents shall prepare a transportation plan for implementation during all phases of future renewable energy facilities developed under the proposed Project. The transportation plan shall address methods for reducing construction worker traffic volumes and project-related equipment and materials transport by implementing the following strategies: (1) provide a construction worker rideshare program; (2) schedule shift changes and deliveries to avoid conflict with peak-hour traffic patterns; (3) establish traffic controls for transport of facility hazardous and nonhazardous materials, components, main assembly cranes, and other large pieces of equipment; and (4) evaluate alternative transportation approaches depending on specific object sizes, weights, origin, destination, peak-hour traffic, and unique handling requirements.

**TRA-2: Coordinate Road Improvements with Local Authorities.** Project proponents shall consult with local planning authorities regarding increased traffic during the construction phase of future renewable energy facilities developed under the proposed Project. Each project proponent shall conduct a project-specific traffic impact assessment of the vehicle numbers per day, their size, and type to determine design for implementing local road improvements and multiple-site access locations for future renewable energy facilities developed under the proposed Project.

**TRA-3: Implement Traffic Control Measures.** Project proponents shall prepare and implement traffic control measures, such as intersection realignment coupled with speed limit reduction; installation of traffic lights and/or other signage; and addition of acceleration, deceleration, and turn lanes on routes with site entrances for future renewable energy facilities developed under the proposed Project.

**TRA-4: Ensure Proper Signage and Travel Management.** Project proponents shall ensure signs are placed along future construction roads to identify speed limits, travel restrictions, and other standard traffic control information. Consideration should be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute times to minimize impacts on local commuters.

**TRA-5: Evaluate Haul Route Conditions.** Project proponents of future renewable energy facilities would be required to retain a professional civil engineer to survey and evaluate the conditions of roads along proposed haul routes prior to commencing construction. Preconstruction conditions shall be documented for each roadway with photo and text description. Video of haul routes may also be used to document preconstruction conditions. The photographs and/or videos are to include documentation of bridges and other appurtenances such as signs, striping, drainage, and other utilities as determined in consultation with the County. The report shall make a determination of the minimum road design criteria needed to support anticipated project traffic and whether the existing roadways comply. Each project proponent shall submit the completed report to the Imperial County Department of Public Works for review and comment.

**TRA-6: Roadway Maintenance Agreement.** Project proponents of future renewable energy facilities shall enter into a Roadway Maintenance Agreement with the County of Imperial, prior to the issuance of a grading permit. Each project proponent shall pay its fair share of the responsibility to maintain future haul routes during construction and, if necessary, bring the roadways up to an appropriate minimum standard to handle the anticipated traffic.

**TRA-7: Roadway Preparation Work.** Project proponents of future renewable energy facilities shall be responsible for roadway preparation work, pavement construction, and repairs to County-maintained roads, including County-maintained bridges and other roadway appurtenances for any other route that is subsequently used as part of the proposed project. This may include, but is not limited to, bridges, signs, striping, drainage improvements and roadway shoulders. Consideration shall also be given to improvements to other infrastructures, such as IID canal and drain crossings. **FEC ORIGINAL PKG**

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**TRA-8: Provide on-site laydown and staging.** Project proponents shall ensure that their future renewable energy facility site contains adequate area for construction laydown and staging, parking for construction and operation worker vehicles, and site traffic circulation aisles.

**TRA-9: Control site access.** Project proponents shall restrict traffic to the roads specified for the future renewable energy facility. Use of other unimproved roads should be restricted to emergency situations involving potential injury or loss of life.

**TRA-10: Repair project-related damage.** Project proponents shall be responsible for repairing or reconstructing project-related access roads that are damaged during construction of future renewable energy facilities to return them to pre-project conditions.

**XVIII. TRIBAL CULTURAL RESOURCES**

- a) 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:
- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**a) According to the Imperial County General Plan's Conservation and Open Space Element,<sup>8</sup> Figure 6<sup>e</sup>, the proposed project site is not located within any known Native American cultural sensitivity area. Additionally, as previously discussed in section (V)(a) above, the Quechan and Campo Band of Mission Indian Tribes have requested to be consulted under Assembly Bill 52. Consultation letters were sent to the Quechan and Campo Band of Mission Indian Tribes on October 25, 2024. On December 12, 2024, the County received a no comments email from the Quechan Indian Tribe<sup>13</sup> in reference to the proposed project. No comments have been received from the Campo Band of Mission Indians Tribe for this project to this date. Therefore, less than significant impacts are expected.**

- (i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as define in Public Resources Code Section 5020.1(k), or
- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**(i) According to the California Historic Resources<sup>3</sup> in Imperial County, the proposed project site is not listed or seem to be eligible under the Public Resources Code Section 21074 or 5020.1 (k); therefore, any impacts are expected to be less than significant.**

- (ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.
- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**(ii) No significant resources listed as defined in the Public Resources Code Section 5024.1 are expected to be impacted by the proposed geothermal exploration project. Additionally, as previously discussed in item (XVIII)(a) above, AB 52 Consultation letters were sent to the Quechan and Campo Band of Mission Indian Tribes on October 25, 2024. On December 12, 2024, the County received a no comments email from the Quechan Indian Tribe<sup>13</sup> in reference to the proposed project. No comments have been received from the Campo Band of Mission Indians Tribe for this project to this date. Less than significant impacts are expected.**

**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 stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant
- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**EEC ORIGINAL PKG**

Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
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environmental effects?

a) The proposed project consists of two exploration geothermal wells intended to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploration wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development. The proposed project does not expect or will result in the relocation or construction of a new expanded water, wastewater treatment or stormwater drainage, electric power, natural gas or telecommunication facilities, the construction of which could cause significant environmental effects.

As previously stated on items (X)(c) and (X)(c)(ii) above, any proposed grading or planned stormwater drainage systems will require drainage application, review, and approval from the Imperial County Public Works Department. Also, as previously stated in section (X)(a) above, for construction projects larger than one (1) acre to discharge into IID water drains, the applicant must submit a Notice of Intent to the California Regional Water Quality Control Board and prepare a Storm Water Pollution Prevention Plan for storm water management during construction. Additionally, a construction storm-water permit from the California Regional Water Quality Control Board is required before commencing construction and an industrial storm water permit from CRWQCB is required for the operation of the proposed facility. The project's Storm Water Pollution Prevention Plan and the storm-water permits are to be submitted to IID. Furthermore, any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any above ground or underground utilities; will require an encroachment permit, or encroachment agreement. In addition, as previously stated in section (X)(c) above, the Applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Compliance with the Imperial County Public Works Department and Imperial Irrigation District standards and requirements would reduce any impacts to less than significant levels.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b) Have sufficient water supplies available to serve the project from existing and reasonably foreseeable future development during normal, dry and multiple dry years?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <b>b) Accordant to the comment letter received from the IID,<sup>14</sup> to obtain water for construction purposes, the applicant should contact IID North End Division and to obtain an encroachment permit. Any impacts are expected to be less than significant.</b>   |                          |                          |                                     |                          |
| c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <b>c) The proposed project does not anticipate any impacts to wastewater; therefore, any impacts are expected to be less than significant.</b>   |                          |                          |                                     |                          |
| d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <b>d) The proposed geothermal exploration project does not anticipate any generation or an excess generation of solid waste. At the time of development, waste removal would require a contracted service from a local waste provider. Less than significant impacts are expected.</b>   |                          |                          |                                     |                          |
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <b>e) As previously stated on item (XIX)(d) above, the proposed project does not anticipate the generation of any solid waste, however, when operational, the project site shall comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Any impacts are expected to be less than significant.</b> |                          |                          |                                     |                          |

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**FEC ORIGINAL PKG**

	Potentially Significant Impact (PSI)	Less Than Significant with Mitigation Incorporated (LTSMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
<p><b>a) As previously stated on item (IX)(f) above, the proposed geothermal exploration project would not interfere with an adopted emergency response plan or emergency evacuation plan. The applicant would meet and adhere to any requirements set forth by the Imperial County Fire/OES Department. Compliance with the Imperial County Fire Department (ICFD) standards and requirements would bring any impact to less than significant.</b></p>				
<p>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?</p> <p><b>b) According to CalFire, the proposed project site is designated as "Local Responsibility Area (LRA) Unzoned." Also, per Imperial County's Seismic and Public Safety Element,<sup>18</sup> Figure 6 – "Fire Hazard Severity Zones,<sup>18d</sup>" the proposed project site is not located within a fire hazard zone. Additionally, as previously stated on section (IX)(g) above, the proposed project site is designated as Local Responsibility Area (LRA) Unzoned and not located within a Fire Hazard Severity Zone (VHFHZ). Furthermore, as previously stated on section (IX)(f), the applicant would meet and adhere to ICFD's standards, requirements, and recommendations; therefore, impacts 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 are expected to be less than significant.</b></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>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?</p> <p><b>c) The proposed geothermal exploration project is considered temporary in nature, and once the exploration drilling of wells is completed, the disturbed areas will be fully reclaimed to their original agricultural use, unless the wells uncover a geothermal resource that necessitates further development. Additionally, as previously stated on items (XX)(a) and (XIX)(a) above, the Applicant would meet and adhere to Imperial County Fire/OES Department and IID's standards, requirements, and recommendations. Less than significant impacts are expected.</b></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>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?</p> <p><b>d) As previously stated on item (VII)(a)(4) above, per Imperial County General Plan's Seismic and Public Safety Element,<sup>18</sup> Figure 3 - "Landslide Susceptibility,<sup>18b</sup>" the proposed project is not located within a landslide activity area. The topography within the proposed project site is generally flat and unless the wells uncover a geothermal resource that necessitates further development of a geothermal facility, such would be subject to compliance with the latest edition of the California Building Code<sup>19</sup> as well as to go through a ministerial building permit review with the County. Additionally, as previously stated on section (IX)(f) above, the applicant would meet and adhere to any requirement as set forth by the Imperial County Fire Department. Subsequently, as previously stated in section (X)(c) above, the Applicant shall furnish a Drainage and Grading Plan to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. Therefore, less than significant impacts are expected.</b></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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 Armadour Waterways v. Armadour 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  
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## V. REFERENCES

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3. California Historic Resources: Imperial County  
<https://ohp.parks.ca.gov/ListedResources/?view=county&criteria=13>
4. California Farmland Mapping & Monitoring Program: Imperial County Important Farmland Map 2018  
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5. Imperial County Agricultural Commissioner comment letter dated November 8, 2024.
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8. Imperial County General Plan: Conservation and Open Space Element  
<https://www.icpds.com/assets/planning/conservation-open-space-element-2016.pdf>
  - a) Figure 1: Sensitive Habitat Map
  - b) Figure 2: Sensitive Species Map
  - c) Figure 3: Agency-Designated Habitats Map
  - d) Figure 5: Areas of Heighten Historic Period Sensitivity Map
  - e) Figure 6: Known Areas of Native American Cultural Sensitivity Map
  - f) Figure 7: Seismic Hazards Map
  - g) Figure 8: Existing Mineral Resources Map
9. California Department of Fish and Wildlife (CDFW) Lands Viewer  
<https://apps.wildlife.ca.gov/lands/>
10. *Global Lithium Energy Corporation Biological Resources Assessment Report*. (2024)  
Barrett's Biological Enterprise, Inc.
11. National Wetlands Inventory Map: Surface Waters and Wetlands  
<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>
12. U.S. Fish & Wildlife (USFWS) Critical Habitat for Threatened & Endangered Species Mapper  
[https://www.arcgis.com/apps/Embed/index.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77&extent=-124.1522,38.0501,-121.4496,39.2098&zoom=true&scale=true&details=true&disable\\_scroll=true&theme=light](https://www.arcgis.com/apps/Embed/index.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77&extent=-124.1522,38.0501,-121.4496,39.2098&zoom=true&scale=true&details=true&disable_scroll=true&theme=light)
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<https://www.icpds.com/assets/planning/seismic-and-public-safety.pdf>
  - a) Figure 2: Regional Fault Lines
  - b) Figure 3: Landslide Susceptibility
  - c) Figure 4: Flood Hazards
  - d) Figure 6: Fire Hazard Severity Zones
19. California Building Standards Commission, 2022 California Building Code.  
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**EFC ORIGINAL PKG**

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22. California Geological Survey Landslide Map  
<https://maps.conservation.ca.gov/cgs/informationwarehouse/landslides/>
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24. University of California Agriculture and Natural Resources SoilWeb Map  
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33. Imperial County Sheriff's Office: Patrol Operations Map  
<https://icso.imperialcounty.org/operations/>
34. Imperial County Land Use Ordinance (Title 9), Division 16: Flood Damage Prevention Regulation  
<https://www.icpds.com/assets/planning/renewable-energy-and-transmission-element-2015.pdf>
35. "County of Imperial General Plan EIR", prepared by Brian F. Mooney & Associates in 1993; and as Amended by County in 1996, 1998, 2001, 2003, 2006 & 2008, 2015, 2016.

**EEC ORIGINAL PKG**

**SECTION 3**  
**III. MANDATORY FINDINGS OF SIGNIFICANCE**

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

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| <p>a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, eliminate tribal cultural resources or eliminate important examples of the major periods of California history or prehistory?</p> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <p>b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)</p>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <p>c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?</p>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### IV. PERSONS AND ORGANIZATIONS CONSULTED

This section identifies those persons who prepared or contributed to preparation of this document. This section is prepared in accordance with Section 15129 of the CEQA Guidelines.

##### A. COUNTY OF IMPERIAL

- Jim Minnick, Director of Planning & Development Services
- Michael Abraham, AICP, Assistant Director of Planning & Development Services
- Diana Robinson, Planning Division Manager
- Gerardo A. Quero, Project Planner
- Air Pollution Control District
- Department of Public Works
- Fire Department
- Agricultural Commissioner
- Environmental Health Services
- Sheriff's Office

##### B. OTHER AGENCIES/ORGANIZATIONS

- Imperial Irrigation District
- County Executive Office
- California Department of Conservation Geologic Energy Management Division
- Fort Yuma Quechan Indian Tribe

***(Written or oral comments received on the checklist prior to circulation)***

**FEC ORIGINAL PKG**

## VI. NEGATIVE DECLARATION – County of Imperial

*The following Negative Declaration is being circulated for public review in accordance with the California Environmental Quality Act Section 21091 and 21092 of the Public Resources Code.*

**Project Name:** Conditional Use Permit #24-0025

**Project Applicant:** Global Lithium Energy Corp.

**Project Location:** 6998 Kalin Road, Calipatria, CA 92233

**Description of Project:** The applicant, Global Lithium Energy Corp., seeks approval for a Conditional Use Permit to allow for the drilling of up to two (2) geothermal exploration wells which aims for the testing and evaluation of geothermal resources (thermal and mineral) and to demonstrate the commercial viability of such in the area. The proposed geothermal exploration project consists of up to two (2) geothermal exploration wells with a proposed depth of 500 to 6,000 feet, two (2) 350 by 200 feet well pads, a 300 by 300 feet move on area, within a fenced footprint of approximately 1,300 by 520 feet area on the southeast corner of property located at 6998 Kalin Road, Calipatria, CA.

A maximum of two (2) exploration wells and two (2) well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible. Should the exploration program be successful and the data indicate viable resource development, the exploration wells will transition into the permitting phase for full-scale field development as geothermal extraction/return injection wells. If the program is unsuccessful, the exploration wells will be plugged and abandoned in accordance with California Division of Oil, Gas, and Geothermal Resources (CDOGGR) requirements.

**EFC ORIGINAL PKG**

**VII. FINDINGS**

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 this Negative Declaration 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.

A MITIGATED NEGATIVE DECLARATION will be prepared.

If adopted, the 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.

**NOTICE**

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

2-13-2025                      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 Mitigation Measures, if applicable, as outlined in the MMRP.*

[Signature]                      2/13/25  
Applicant Signature                      Date

**EEC ORIGINAL PKG**

## SECTION 4

### VIII. RESPONSE TO COMMENTS

(ATTACH DOCUMENTS, IF ANY, HERE)

**FEC ORIGINAL PKG**

**IX. MITIGATION MONITORING & REPORTING PROGRAM (MMRP)**

(ATTACH DOCUMENTS, IF ANY, HERE)



**MITIGATION, MONITORING AND REPORTING PROGRAM**

**MITIGATION MEASURES  
PURSUANT TO THE ENVIRONMENTAL EVALUATION COMMITTEE  
February 13, 2025  
Global Lithium Energy Corp.  
[CUP #24-0025]**

**(APN 020-120-025-000)**

**(CEQA – Mitigated Negative Declaration)**

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**MITIGATION MEASURES: AESTHETICS**

**AESTH-1: Pre-Construction Meetings<sup>1</sup>**

Project developers would be required to hold preconstruction meetings, if applicable, with affected agencies and designated specialists to coordinate the mitigation strategy for all resources of record. This includes a review of final design and construction documents regarding visual impacts and mitigation.

**AESTH-2: Visual Monitoring during Operations and Maintenance<sup>1</sup>**

Project developers would be required to monitor compliance with mitigation requirements and consult with the affected agencies during operations and maintenance. Maintaining visual resource design elements would include maintaining revegetated surfaces until self-sustaining; keeping facilities in good repair and repainting as necessary; restoring land as soon as possible after disturbance; controlling dust and noxious weeds; and operating so as to avoid high-intensity light (glare) being reflected off site.

**AESTH-3: Site Reclamation<sup>1</sup>**

Immediate reclamation of the site, either on federal, State, or private land, would be required for renewable energy facilities after construction. These reclamation activities may include restoration of agricultural farmland to the prior condition. Methods for minimizing visual contrast during reclamation and decommissioning include undertaking treatments such as thinning and feathering vegetation at project edges, enhancing contouring, salvaging landscape materials, and revegetating; restoring the project area to predevelopment visual conditions and the inventoried visual quality rating; removing aboveground and near-ground-level structures; contouring soil borrow areas and other features to approximate natural slopes; using native vegetation to establish form, line, color, and texture consistent with the surrounding undisturbed landscape; distributing stockpiled topsoil to disturbed areas and replanting; and removing or burying gravel or other surface treatments.

**AESTH-4<sup>1</sup>:**

Future renewable energy facilities would be required to consider sitting and design features that would minimize glint and glare and take appropriate actions. These actions include identifying glint and glare effects, assessing and quantifying these effects to determine potential safety and visual impacts, and having qualified

**EEC ORIGINAL PKG**  
1. Imperial County's Renewable Energy and Transmission Element Final Programmatic Environmental Impact Report MMRP  
2. Global Lithium Energy Corp. Biological Resources Assessment Report by Barrett's Biological Enterprise, Inc.

people conduct such assessments. Methods to minimize glint and glare include limiting use of signs; using reflective or luminescent markers instead of permanent lighting; minimizing offsite visibility of signs and lighting; using non-glare materials and appropriate colors; mitigating or offsetting visual impact by reclaiming unnecessary roads, removing abandoned buildings, using underground utility lines, and rehabilitating and revegetating disturbed areas.

(Monitoring Agency: Imperial County Planning & Development Services Department)

## MITIGATION MEASURES: AIR QUALITY

### AQ-11:

Prior to commencing construction, the project proponent shall submit a Dust Control Plan to the ICAPCD for approval identifying all sources of PM<sub>10</sub> emissions and associated mitigation measures during the construction and operational phases of their future renewable energy project. The project proponent shall submit a "Construction Notification Form" to the ICAPCD 10 days prior to the commencement of any earthmoving activity. 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-site and off-site unpaved roads segments with 50 or more average vehicle trips per day, shall be effectively stabilized; so as to limit 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 1.0 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.
- The transport of bulk materials on public roads 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 shall be cleaned and/or washed at the delivery site after removal of bulk material, prior to using the trucks to haul material on public roadways.
- All track-out or carry-out on paved public roads, 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, 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 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 except where such material or activity is exempted from stabilization by the rules of ICAPCD.
- The construction of new unpaved roads is prohibited within any area with a population of 500 or more, unless the road meets ICAPCD's 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.

**AQ-21:**

The project proponent shall implement all applicable standard mitigation measures for construction combustion equipment for the reduction of excess NOX emissions as contained in the Imperial County CEQA Air Quality Handbook and associated regulations. These measures include:

- 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 five minutes at a maximum.
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (assuming powered by a portable generator set and are available, cost effective, and capable of performing the task in an effective, timely manner).
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to avoid overlap of construction phases, which would reduce short-term impacts).

(Monitoring Agency: Imperial County Department of Public Works & Imperial County Air Pollution Control District)

**MITIGATION MEASURES: BIOLOGICAL REFOUCES**

**BIO-1: Conduct Surveys for Special Status Plant Species<sup>1</sup>**

As a requirement of an application for a renewable energy facility, surveys for special status plant species shall be conducted by qualified and agency-approved botanists to determine the presence or absence of sensitive plant species within the project footprint. Surveys shall be conducted following CDFW or BLM survey guidelines and be appropriately timed to coincide with the blooming periods for these species. Special status plants identified within the construction disturbance area shall be avoided to the extent feasible. A qualified botanist shall supervise the installation of orange construction fencing or other visible material to establish buffer zones between special status plants and construction disturbance.

**BIO-2: Conduct Surveys for Special Status Animal Species<sup>1</sup>**

As a requirement of an application for a future renewable energy facility, surveys for special status animal species shall be conducted by qualified and agency-approved biologists to determine the presence or absence of sensitive animal species within the footprint of a future renewable energy project. Required surveys for special status animal species may include, but are not limited to, American badgers, burrowing owl, flat-tailed horned lizard, golden eagle, mountain plover, prairie falcons, Swainson's hawk, and Yuma Ridgway's rail, among others. Any special status mammal, reptile, and amphibian species detected during surveys shall be passively relocated to areas outside the construction zone and prevented from reentering the future project area with the installation of silt fencing or other exclusion fencing. All fencing shall be periodically monitored and maintained for the duration of construction. Passive relocation shall only be done in the nonbreeding season in accordance with guidelines and consultations with resource agencies. Depending on which special status species are present within the project boundaries, passive relocation measures may include covering or excavating all burrows or dens and installing one-way doors into occupied burrows. This would allow any

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animals inside to leave the burrow but would exclude any animals from reentering the burrow. The burrows shall then be excavated and filled in to prevent their reuse. Other types of relocation measures may be required, depending on which special status species are present within the project boundaries. If direct impacts to special status species cannot be avoided, an agency-approved biologist shall prepare a species-specific Mitigation and Monitoring Plan that would detail the approved, site-specific methodology proposed to minimize and mitigate impacts to each species. Passive relocation, destruction of burrows, construction of artificial burrows, etc. shall be completed only upon prior approval by and in cooperation with CDFW and/or USFWS.

#### **BIO-3: Mark Areas of Construction Boundaries<sup>1</sup>**

All areas to be disturbed during construction of future renewable energy facilities developed under the proposed Project would be required to flag disturbance boundaries prior to construction. All disturbances would be confined to these flagged areas, and all employees would be instructed that their activities must be confined to locations within the flagged areas. Project proponents of future renewable energy facilities developed under the proposed Project would be required to have environmental monitors on-site during construction activities.

#### **BIO-4: Power Wash Equipment Prior to Arrival on Site<sup>1</sup>**

All construction equipment used during construction of future renewable energy facilities developed under the proposed Project would be required to be power washed prior to arrival at the future project site to prevent the transportation and establishment of noxious weeds in the project area.

#### **BIO-5: Implement a Worker Environmental Awareness Program<sup>1</sup>**

A brief Worker Environmental Awareness Program (WEAP) would be implemented for construction crews prior to the commencement of project activities for future renewable energy facilities developed under the proposed Project. Training materials and briefings would include, but would not be limited to, discussion of the Federal and State ESAs, the consequences of noncompliance with these acts, identification and values of wildlife and natural plant communities, hazardous substance spill prevention and containment measures, and review of all required and recommended mitigation measures.

#### **BIO-6: Additional Project Mitigation<sup>1</sup>**

Additional biological mitigation may be required based on the renewable energy technology to be developed at specific project locations. Project proponents for future renewable energy facilities would be required to evaluate how specific renewable energy facilities may impact sensitive species and how to mitigate impacts through site design and/or mitigation and monitoring activities.

#### **BIO-7: Develop a Habitat Restoration Plan and Provide for Offsite Mitigation for Temporary or Permanent Impacts<sup>1</sup>**

As a requirement of an application for a future renewable energy facility, project proponents shall make an effort to minimize impacts on sensitive natural communities, especially riparian habitats, when designing and permitting projects in order to preserve both the habitat and the overall ecological functions of these areas. These efforts to minimize impacts on riparian habitats and other sensitive natural communities shall be done consistent with CDFW guidelines. Future project proponents shall minimize ground disturbance and construction footprints within and near such areas to the extent practicable. Where avoidance of these areas is not feasible, future project proponents shall arrange for offsite replacement of removed habitats in accordance with consultation with CDFW.

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Prior to construction, future project proponents shall develop a Habitat Restoration Plan (HRP) for review and approval by CDFW and the County of Imperial. The HRP shall be prepared by a qualified biologist and/or botanist and shall detail the methods for restoring or enhancing any riparian habitats or other sensitive natural communities impacted within the project area. The goal of the HRP shall be to mitigate any temporary or permanent impacts to riparian habitats or other sensitive natural communities. Mitigation ratios would be developed through consultation with CDFW and the County of Imperial.

**BIO-8: Provide Restoration/Compensation for Affected Jurisdictional Areas<sup>1</sup>**

Impacts to areas under the jurisdiction of the USACE, RWQCB Regional Water Boards, State Water Board, and CDFW shall be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible, each applicant shall provide the necessary mitigation required as part of wetland permitting by creation/restoration/preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional area mitigation. The location(s) of the mitigation would be determined in consultation with USACE, CDFW, RWQCB, and BLM as part of the wetland permitting process. A jurisdictional delineation and impact assessment shall be prepared for each site based on the final alignment and final engineering plans when they are complete. Mitigation ratios would be developed through consultation with the wetland permitting agencies. The width of wetland buffers would also depend on the sensitivity of the jurisdictional habitat and on the requirements of the wetland permitting agencies.

**BIO-9<sup>2</sup>:**

If occupied burrows are found on site, and if necessary, the burrows shall be passively relocated by a qualified biologist outside of nesting season and an appropriate number of artificial burrows shall be installed. If possible, these burrows shall be installed as close as possible to the passively relocated burrows. A Plan should be prepared to address activities and conservation efforts and submitted to CDFW.

**BIO-10<sup>2</sup>:**

If not in the active construction areas, the occupied burrows can be sheltered in place with appropriate materials under the supervision of a qualified biologist and accordance with the approved Plan.

**BIO-11<sup>2</sup>:**

If occupied burrows are sheltered, a biological monitor shall monitor areas of active construction; schedule to be determined by qualified biologist. This biologist will ensure that the project complies with these mitigation measures and will have the authority to halt activities if they are not in compliance. The biologist will inspect the construction areas periodically for the presence of BUOWs.

**BIO-12<sup>2</sup>:**

If work is stopped for longer than 30 days, the area will be resurveyed prior to restart of construction.

**BIO-13: Pre-Construction Survey<sup>2</sup>**

A preconstruction survey should be carried out 14-30 days and 24 hours prior to initiating ground disturbance. The report should be submitted to the appropriate agencies but not limited to ICPDS. If necessary, an Exclusion Plan would be prepared with consultation with CDFW if BUOW are found on site after the initial preconstruction survey.

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## AVOIDANCE ACTIVITIES<sup>2</sup>

It is recommended that construction foremen and workers and onsite employees be given bilingual worker training by a qualified biologist regarding burrowing owl that would include the following:

- Permittee shall conduct an education program for all persons employed or otherwise working on the Project prior to performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the biology of the habitats and species identified in this letter expected and present at this site. The Designated Biologist or safety manager with access to the Designated Biologist shall also include as part of the education program a brief discussion information about the distribution and habitat needs of any protected species that may be present, legal protections for those species, penalties for violations, and Project specific protective measures included in this Agreement. Interpretation shall be provided for non-English- speaking workers, and the same instruction shall be provided for any new workers prior to their performing work on-site. The Permittee shall prepare and distribute wallet-sized cards or a fact sheet that contains this information for workers to carry on-site. Upon completion of the education program, employees shall sign a form stating they attended the education program and understand all protection measures. These forms shall be filed at the worksite offices and be available to CDFW upon request. The education program shall be repeated annually for part of the Project extending more than one (1) year. Copies of the education program materials shall be maintained at the Project site for workers to reference as needed. Project contractor responsible for environmental (oil spills/oil containment/dust control/erosion control) training.
- Permittee shall include a brief invasive species education program for all persons working on the Project prior to the performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the invasive species currently present within the Project site as well as those that may pose a threat to or have the potential to invade the Project site. The brief discussion shall include a physical description of each species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts. The education program shall also include a brief discussion of Best Management Practices (BMPs) to be implemented at the Project site to avoid the introduction and spread of invasive species into and out of the Project site. Note: the Worker Environmental Awareness Program (WEAP) presentation shall not exceed 30 minutes.
- A biologist should be consulted immediately if a dead or injured bird is found on site.

## MINIMIZATION MEASURES<sup>2</sup>:

- A qualified biologist will complete an initial take avoidance survey between 14-30 days; and within 24 hours prior to ground disturbance activities using the recommended methods described in the Detection Surveys found in CDFW Staff Report (2012) section above. Implementation of avoidance and minimization measures would be triggered by positive BUOW presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls prior to vegetation removal or ground-disturbing activities. If burrowing owls are detected during the focused take avoidance preconstruction surveys, the qualified biologist and Project proponent shall prepare an Exclusion Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Plan shall describe proposed avoidance, monitoring, passive relocation, minimization, and/or mitigation actions. The Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and

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details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Plan shall also describe minimization and compensatory mitigation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. The Plan shall identify compensatory mitigation for the temporary or permanent loss of occupied burrow(s) and habitat consistent with the "Mitigation Impacts" section of the 2012 CDFW's Staff Report on Burrowing Owl Mitigation and shall implement CDFW-approved mitigation prior to initiation of Project activities. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls. If no suitable habitat is available nearby, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls shall also be included in the Plan. The Project proponent shall implement the Plan following CDFW review and approval.

- It is recommended to avoid direct or indirect impacts to BUOW, a preconstruction survey for this species should be conducted. If BUOW is present, mitigation will be required. Minimization measures could include preconstruction surveys within 14-30 days and 24 hours of start of groundbreaking activities and bilingual worker training.
- Any adverse effects to 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 would be considered significant and require mitigation measures.

(Monitoring Agency: Imperial County Planning & Development Services Department & Applicant)

#### **MITIGATION MEASURES: GEOLOGY AND SOILS**

##### **GEO-1: Develop and Implement a Storm Water Pollution Prevention Plan (SWPPP)<sup>1</sup>**

Future renewable energy facilities developed under the proposed Project would require a detailed SWPPP to be developed and implemented to minimize erosion during construction in compliance with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit. The SWPPP would be required to include the following:

- A detailed description of all Best Management Practices (BMPs) that will be employed
- An outline of the areas on site that will be disturbed during construction of the project
- An outline of all areas that will be stabilized by temporary or long-term erosion control measures
- A proposed schedule for the implementation of erosion control measures

In addition, all surface water and drainage features within 1,000 feet of construction activities shall be identified. Construction activities within 100 feet of these resources shall implement the BMPs detailed in the SWPPP prepared for each project.

##### **GEO-2: Implement Corrosion Protection Measures<sup>1</sup>**

As determined appropriate by a licensed geotechnical or civil engineer, each project proponent shall ensure that all underground metallic fittings, appurtenances, and piping located in corrosive soils include a cathodic

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protection system to protect these facilities from corrosion for future renewable energy facilities developed under the proposed Project.

### **GEO-3: Demonstrate Compliance with On-Site Wastewater Treatment and Disposal Requirements<sup>1</sup>**

Wastewater treatment and disposal system(s) associated with future renewable energy facilities shall demonstrate compliance with the Imperial County performance standards as outlined in Title 9, Division 10, Chapters 4 and 12 of the Imperial County Land Use Ordinance. Prior to construction, and again prior to operation, each future project proponent would be required to obtain all necessary permits and/or approvals from Imperial County. Each future project proponent would be required to demonstrate that the system adequately meets County requirements, which have been designed to protect beneficial uses and ensure that applicable water quality standards are not violated. This shall include documentation that the system would not conflict with the Regional Water Quality Control Board's (RWQCB) Anti-Degradation Policy.

(Monitoring Agency: Imperial County Planning & Development Services Department)

### **MITIGATION MEASURES: HAZARDS AND HAZARDOUS MATERIALS**

#### **HAZ-1:**

Proponents of future renewable energy facilities developed under the proposed Project that would handle hazardous materials that exceed regulatory thresholds would need to prepare and submit a Business Emergency Response Plan for approval to the State Department of Toxic Substance Control and County of Imperial Local Enforcement Agency.

(Monitoring Agency: Imperial County Planning & Development Services Department)

### **MITIGATION MEASURES: HYDROLOGY AND WATER QUALITY**

#### **HYDRO-1: Acquire Appropriate CWA Regulatory Permits, Prepare SWPPP, and Implement BMPs Prior to Construction and Site Restoration<sup>1</sup>**

Project proponents or project construction contractors for future renewable energy facilities would be required to prepare a project-specific SWPPP and be responsible for securing coverage under SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by each project applicant prior to commencement of work and shall be made conditions of the contract with each contractor selected to build and decommission future renewable energy facilities developed under the proposed Project. The SWPPP(s) shall, at a minimum, incorporate control measures in the following categories:

- Soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching)
- Dewatering and/or flow diversion practices, if required (see Mitigation Measure HYDRO-2)
- Sediment control practices (temporary sediment basins, fiber rolls)
- Temporary and postconstruction on-site and off-site runoff controls
- Special considerations and BMPs for water crossings, wetlands, and drainages

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- **Monitoring protocols for discharge(s) and receiving waters, with emphasis placed on the following water quality objectives: dissolved oxygen, floating material, oil and grease, pH, and turbidity**
- **Waste management, handling, and disposal control practices**
- **Corrective action and spill contingency measures**
- **Agency and responsible party contact information**
- **Training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP**

Each SWPPP shall be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and that represents the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Given that Imperial Valley Drains would accept runoff from areas within the Salton Trough and are listed as impaired for sediment, the SWPPP shall include BMPs sufficient for Risk Level 2 projects. BMPs for soil stabilization and erosion control practices and sediment control practices would also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) is required to determine adequacy of the measure.

#### **HYDRO-2: Properly Dispose of Construction Dewatering in Accordance with the Colorado River Basin Regional Water Quality Control Board<sup>1</sup>**

If required, all construction dewatering for future renewable energy facilities developed under the proposed Project shall be discharged to an approved land disposal area or drainage facility in accordance with Colorado River Basin RWCQB requirements. Each future project proponent or project construction contractor shall provide the Colorado River Basin RWQCB with the location, type of discharge, and methods of treatment and monitoring for all groundwater dewatering discharges. Emphasis shall be placed on those discharges that would occur directly or in proximity to surface water bodies and drainage facilities.

#### **HYDRO-3: Comprehensive Drainage and Sedimentation Control Plan<sup>1</sup>**

Project proponents for future renewable energy facilities would be required to prepare a Comprehensive Drainage and Sedimentation Plan (Plan) prior to the initiation of construction (or decommissioning as relevant). Detailed hydrologic analysis shall be performed prior to final design of the specific future renewable energy project. Results of these analyses will be submitted to the County for review. All proposed grading and impervious surfaces on-site shall be reviewed and approved by the County with respect to its potential to cause or result in additional erosion and sedimentation, increased stormwater flows, or altered drainage patterns that could lead to unintentional ponding or flooding on-site or downstream, and/or additional erosion and sedimentation. The Plan shall include, but not be limited to, the following measures:

- **Construction of access corridors and temporary and permanent access roads shall not block existing drainage channels and shall not significantly alter the existing topography.**
- **The project proponent shall delineate the active drainage channels within each drainage avoidance area and avoid placement of proposed flood protection berms within active drainage channels. The drainage avoidance areas shall protect no less than 90 percent of the area of the active drainage channels from construction impacts.**
- **The project proponent shall prepare hydraulic analyses that estimate the pre- and post-Conclusions.**

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(Monitoring Agency: Imperial County Planning & Development Services Department)

#### **MITIGATION MEASURES: NOISE**

##### **NOI-1: Implement Noise Reduction Techniques<sup>1</sup>**

**Project proponents developing future renewable energy facilities shall implement the following requirements:**

- **Limit noisy construction activities (including but not limited to truck and rail deliveries, pile driving, and blasting) to the least noise-sensitive times of day consistent with the requirements of the County of Imperial Noise Ordinance.**
- **Consider use of noise barriers such as berms and vegetation to limit ambient noise at plant property lines, especially where noise-sensitive receptors may be present.**
- **Ensure all project equipment has the appropriate sound-control devices and shield-impact tools. Use battery-powered forklifts and other facility vehicles and flashing lights instead of audible backup alarms on mobile equipment.**
- **Locate stationary construction equipment (such as compressors and generators) as far as practical from nearby residences.**
- **If blasting or other noisy activities are required during the construction period, notify nearby residents and the permitting agencies 24 hours in advance.**
- **Properly maintain mufflers, brakes, and all loose items on construction and operation-related vehicles to minimize noise and ensure safe operations. Operate trucks as quietly as possible, while considering local conditions. Advise about downshifting and vehicle operations in residential communities to keep truck noise to a minimum.**
- **Install mufflers on diesel and gas-driven engine air coolers and exhaust stacks. Equip emergency pressure relief valves and steam blow-down lines with silencers to limit noise levels.**
- **Contain project facilities within buildings or other types of effective noise enclosures, when necessary and feasible.**
- **Employ engineering controls, including sound-insulated equipment and control rooms, to reduce the average noise level to appropriate levels in normal work areas.**

(Monitoring Agency: Imperial County Planning & Development Services Department)

#### **MITIGATION MEASURES: TRANSPORTATION**

##### **TRA-1: Implement A Transportation Plan<sup>1</sup>**

**Project proponents shall prepare a transportation plan for implementation during all phases of future renewable energy facilities developed under the proposed Project. The transportation plan shall address methods for reducing construction worker traffic volumes and project-related equipment and materials transport by implementing the following strategies: (1) provide a construction worker rideshare program; (2) schedule shift changes and deliveries to avoid conflict with peak-hour traffic patterns; (3) establish traffic controls for transport of facility hazardous and nonhazardous materials, components, main assembly cranes, and other large pieces of equipment; and (4) evaluate alternative transportation approaches depending on specific object sizes, weights, origin, destination, peak-hour traffic, and unique handling requirements.**

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#### **TRA-2: Coordinate Road Improvements with Local Authorities<sup>1</sup>**

Project proponents shall consult with local planning authorities regarding increased traffic during the construction phase of future renewable energy facilities developed under the proposed Project. Each project proponent shall conduct a project-specific traffic impact assessment of the vehicle numbers per day, their size, and type to determine design for implementing local road improvements and multiple-site access locations for future renewable energy facilities developed under the proposed Project.

#### **TRA-3: Implement Traffic Control Measures<sup>1</sup>**

Project proponents shall prepare and implement traffic control measures, such as intersection realignment coupled with speed limit reduction; installation of traffic lights and/or other signage; and addition of acceleration, deceleration, and turn lanes on routes with site entrances for future renewable energy facilities developed under the proposed Project.

#### **TRA-4: Ensure Proper Signage and Travel Management<sup>1</sup>**

Project proponents shall ensure signs are placed along future construction roads to identify speed limits, travel restrictions, and other standard traffic control information. Consideration should be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute times to minimize impacts on local commuters.

#### **TRA-5: Evaluate Haul Route Conditions<sup>1</sup>**

Project proponents of future renewable energy facilities would be required to retain a professional civil engineer to survey and evaluate the conditions of roads along proposed haul routes prior to commencing construction. Preconstruction conditions shall be documented for each roadway with photo and text description. Video of haul routes may also be used to document preconstruction conditions. The photographs and/or videos are to include documentation of bridges and other appurtenances such as signs, striping, drainage, and other utilities as determined in consultation with the County. The report shall make a determination of the minimum road design criteria needed to support anticipated project traffic and whether the existing roadways comply. Each project proponent shall submit the completed report to the Imperial County Department of Public Works for review and comment.

#### **TRA-6: Roadway Maintenance Agreement<sup>1</sup>**

Project proponents of future renewable energy facilities shall enter into a Roadway Maintenance Agreement with the County of Imperial, prior to the issuance of a grading permit. Each project proponent shall pay its fair share of the responsibility to maintain future haul routes during construction and, if necessary, bring the roadways up to an appropriate minimum standard to handle the anticipated traffic.

#### **TRA-7: Roadway Preparation Work<sup>1</sup>**

Project proponents of future renewable energy facilities shall be responsible for roadway preparation work, pavement construction, and repairs to County-maintained roads, including County-maintained bridges and other roadway appurtenances for any other route that is subsequently used as part of the proposed project. This may include, but is not limited to, bridges, signs, striping, drainage improvements and roadway

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shoulders. Consideration shall also be given to improvements to other infrastructures, such as IID canal and drain crossings.

**TRA-8: Provide on-site Laydown and Staging<sup>1</sup>**

Project proponents shall ensure that their future renewable energy facility site contains adequate area for construction laydown and staging, parking for construction and operation worker vehicles, and site traffic circulation aisles.

**TRA-9: Control Site Access<sup>1</sup>**

Project proponents shall restrict traffic to the roads specified for the future renewable energy facility. Use of other unimproved roads should be restricted to emergency situations involving potential injury or loss of life.

**TRA-10: Repair Project-Related Damage<sup>1</sup>**

Project proponents shall be responsible for repairing or reconstructing project-related access roads that are damaged during construction of future renewable energy facilities to return them to pre-project conditions.

(Monitoring Agency: Imperial County Planning & Development Services Department & Imperial County Department of Public Works)

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**ATTACHMENT #1**  
**COMMENT LETTERS**

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COUNTY EXECUTIVE OFFICE

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County Executive Officer  
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**RECEIVED**

By Imperial County Planning & Development Services at 4:09 pm, Nov 05, 2024

November 5, 2024

TO: Gerardo Quero, Planning and Development Services Department

FROM: Rosa Lopez, Executive Office 

SUBJECT: Request for Comments – Global Lithium Energy Corp Project, CUP#24-0025 / IS#24-0036 APN 020-120-025-000

The County of Imperial Executive Office is responding to a request for comments: Global Lithium Energy Corp Project, CUP#24-0025 / IS#24-0036 APN 020-120-025-000. The Executive Office would like to inform the developer of conditions and responsibilities of the applicant seeking a Conditional Use Permit (CUP). The following conditions will be written into the CUP, but not limited to:

- Sales Tax Guarantee. The permittee is required to have a Construction Site Permit reflecting the project site address, allowing all eligible sales tax payments are allocated to the County of Imperial, Jurisdictional Code 13998. The permittee will provide the County of Imperial a copy of the California Department of Taxation and Fee Administration (CDTFA) account number and sub-permit for its contractor and subcontractors (if any) related to the jobsite. Permittee shall provide in written verification to the County Executive Office that the necessary sales and use tax permits have been obtained, prior to the issuance of any grading permits and subsequently continue throughout the permitting process.
- Construction/Material Budget: The permittee will provide the County Executive Office a construction materials budget: an official construction materials budget or detailed budget outlining the construction and materials cost for the processing facility on permittee letterhead.
- At developers cost, the County Executive Office shall hire a third-party consultant to produce a Fiscal and Economic Impact Analysis & Job and Employment Analysis (FEIA & JEIA) prior to the project being placed on Planning Commission meeting.
- Public Service Agreement. The developer shall enter into a Public Service Agreement with the County of Imperial.

Should there be any concerns and/or questions, do not hesitate to contact me.



November 7, 2024

**RECEIVED**

By Imperial County Planning & Development Services at 1:05 pm, Nov 07, 2024

Jim Minnick  
Planning & Development Services Director  
801 Main Street  
El Centro, CA 92243

SUBJECT: Conditional Use Permit 24-0025 – Global Lithium Energy Corp.

Dear Mr. Minnick:

The Imperial County Air Pollution Control District (Air District) appreciates the opportunity to review and comment on Conditional Use Permit (CUP) 24-0025 (Project). The project proposes drilling two geothermal exploration wells to demonstrate the commercial viability of geothermal resources. The project consists of two geothermal exploration wells with a proposed depth of 500ft to 6,000ft, two 350ft x 200ft well pads, a 300ft x 300ft move on area, within an approximately 1,300ft x 520ft fenced footprint. The project is located at 6998 Kalin Rd, Calipatria, also identified with Assessor's Parcel Number 020-120-025.

The Air District informs the applicant that the wells will require an Air District permit and requests the applicant submit an application for engineering review of the project prior to beginning construction of the project. The project packet identifies that the drilling equipment will be permitted under the California Air Resources Board's (CARB) Portable Engine Registration Program (PERP), the Air District requests to be notified when the equipment will be on site for operation and requests a copy of the PERP registration be shared with the Air District. In the event the equipment is not PERP certified an application for engineering review of the equipment should be submitted to determine the permitting requirements.

The Air District also reminds the applicant that the project must comply with all Air District rules and regulations and would emphasize Regulation VIII, a collection of rules designed to maintain fugitive dust emission below 20% visual opacity.

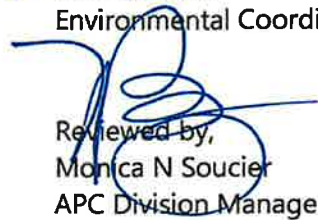
Finally, the Air District requests a copy of the draft CUP prior to recording for review.

For your convenience the Air District's rules and regulations can be accessed online at <https://apcd.imperialcounty.org/rules-and-regulations> and the permitting forms can be found at <https://apcd.imperialcounty.org/engineering/>. Should you have any questions or concerns please feel free to contact the Air District for assistance at (442) 265-1800.

Respectfully,



Ismael Garcia  
Environmental Coordinator II



Reviewed by,  
Monica N Soucier  
APC Division Manager





# IID

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*Since 1911*

November 7, 2024

**RECEIVED**

By Imperial County Planning & Development Services at 2:33 pm, Nov 06, 2024

Mr. Gerardo Quero  
Planner II  
Planning & Development Services Department  
County of Imperial  
801 Main Street  
El Centro, CA 92243

SUBJECT: Global Lithium Energy Corp. Geothermal Exploration Well Project; CUP#24-0025/IS#0036

Dear Mr. Quero:

On October 26, 2024, the Imperial Irrigation District received from the Imperial County Planning & Development Services Department, a request for agency comments on the Global Lithium Energy Corp. geothermal exploration well project; Conditional Use Permit No. 24-0025, Initial Study No. 24-0036. The applicant proposes to drill two (2) geothermal exploration wells on the south corner of the property located at 6998 Kalin Road, Calipatria, California (APN 020-120-025-000) within a fenced area of approximately 1,300 ft. by 520 ft.

The IID has reviewed the application and has the following comments:

1. If and when the project needs electrical service, the applicant should be advised to contact Gabriel Ramirez, IID project development planner, at (760) 339-9257 or e-mail Mr. Ramirez at [GRamirez@IID.com](mailto:GRamirez@IID.com) to initiate the customer service application process. In addition submitting a formal application (available for download at the IID website (<http://www.iid.com/home/showdocument?id=12923>), the applicant will be required to submit an AutoCAD file of site plan, approved electrical plans, electrical panel size and panel location, operating voltage, electrical loads, project schedule, and the applicable fees, permits, easements and environmental compliance documentation pertaining to the provision of electrical service to the project. The applicant shall be responsible for all costs and mitigation measures related to providing electrical service to the project.
2. Electrical capacity is limited in the project area. A circuit study may be required. Any system improvements or mitigation identified in the circuit study to enable the provision of electrical service to the project shall be the financial responsibility of the applicant.
3. Applicant shall provide a surveyed legal description and an associated exhibit certified by a licensed surveyor for all rights of way deemed by IID as necessary to accommodate the project electrical infrastructure. Rights-of-Way and easements shall be in a form acceptable to and at no cost to IID for installation, operation, and maintenance of all electrical facilities.

**EEC ORIGINAL PKG**

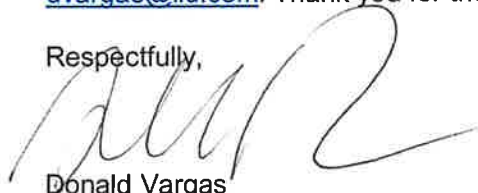
4. IID water facilities that could be impacted include the Vail Lateral 1, Vail Lateral 2, Vail 2 Drain, and the Vail 2A Drain.
5. The applicant may not use IID canal or drain banks to access proposed well sites.
6. The applicant will be required to provide and bear all costs associated with acquisition of land rights of way, easements and infrastructure relocations and realignments deemed necessary to accommodate the project. Any street or road improvements imposed by the local governing authority shall also be at the applicant's cost.
7. The applicant will be required to provide rights of ways and easements for any proposed power line extensions and/or any other infrastructure needed to serve the project as well as the necessary access to allow for continued operation and maintenance of any IID facilities located on adjoining properties where no public access exists.
8. To obtain water for construction purposes, the applicant should contact IID North End Division at (760) 482-9900.
9. The use of IID water during the project's construction phase will require an encroachment permit.
10. The project's containments basins must be designed and constructed in accordance with requirements from the California Regional Water Quality Control Board such that they do not induce seepage from or create instability in adjacent IID facilities.
11. For construction projects larger than one (1) acre to discharge into IID water drains, the applicant must submit a Notice of Intent to the CRWQCB and prepare a Storm Water Pollution Prevention Plan for storm water management during construction. If the project includes dewatering activities, adequate details must be included in the SWPPP to delineate this purpose.
12. A construction storm-water permit from the CRWQCB is required before commencing construction and an industrial storm water permit from CRWQCB is required for the operation of the proposed facility. The project's SWPPP and the storm-water permits are to be submitted to IID.
13. In the event that the exploratory wells become permanent, ground subsidence may impact IID water facilities. The applicant should contact IID Water Department Engineering Services for monitoring and mitigation of impacts from these wells. IID WDES can be contacted at (760) 339-9265 for further information on this matter.
14. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions for its completion are available at the website <https://www.iid.com/about-iid/departments-directory/real-estate>. No foundations or

buildings will be allowed within IID's right of way. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

15. An IID encroachment permit is required to utilize existing surface-water drainpipe connections to drains and receive drainage service from IID. Surface-water drainpipe connections are to be modified in accordance with IID Water Department Standards.
16. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim additional secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and are not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be placed on adjacent facilities to mitigate or avoid impacts to IID's facilities.
17. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, water deliveries, canals, drains, etc.) need to be included as part of the project's California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA) documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully analyzed. Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.

Should you have any questions, please do not hesitate to contact me at 760-482-3609 or at [dvargas@iid.com](mailto:dvargas@iid.com). Thank you for the opportunity to comment on this matter.

Respectfully,



Donald Vargas  
Compliance Administrator II

Jamie Asbury – General Manager  
Mike Pacheco – Manager, Water Dept.  
Matthew H Smelser – Manager, Power Dept.  
Paul Rodriguez – Deputy Mgr. Power Dept.  
Geoffrey Holbrook – General Counsel  
Michael P. Kemp – Superintendent General, Fleet & Compliance Services  
Laura Cervantes. – Supervisor, Real Estate  
Jessica Humes – Environmental Project Mgr. Sr., Water Dept.

**EEC ORIGINAL PKG**



# Imperial County Planning & Development Services Planning / Building

Jim Minnick  
DIRECTOR

**RECEIVED**

By Imperial County Planning & Development Services at 2:01 pm, Nov 08, 2024

**October 25, 2024  
REQUEST FOR REVIEW  
AND COMMENTS**

The attached project and materials are being sent to you for your review and as an early notification that the following project is being requested and being processed by the County's Planning & Development Services Department. Please review the proposed project based on your agency/department area of interest, expertise, and/or jurisdiction.

- | To: County Agencies   | State Agencies/Other  | Cities/Other  |
|---|---|---|
| <input checked="" type="checkbox"/> County Executive Office – Miguel Figueroa/ Rosa Lopez/Rebecca Terrazas- Baxter/ Bari Smith Bean                           | <input checked="" type="checkbox"/> IC Sheriff's Office – Ryan Kelley/ Fred Miramontes/ Robert Benavidez                          | <input checked="" type="checkbox"/> IID – Donald Vargas   |
| <input checked="" type="checkbox"/> Public Works – Carlos Yee/John Gay/ Veronica Atondo   | <input checked="" type="checkbox"/> Board of Supervisors – Ryan E. Kelley- District 4   | <input checked="" type="checkbox"/> IC Fire/OES Office – Andrew Loper/ David Lantzer  |
| <input checked="" type="checkbox"/> Fort Yuma- Quechan Indian Tribe – Jordan D. Joaquin/ Frank L. Reece   | <input checked="" type="checkbox"/> Ag. Commissioner – /Margo Sanchez/Antonio Venegas/ Ashley Jauregui/ Jolene Jauregui           | <input checked="" type="checkbox"/> EHS – Jeff Lamoure/Jorge Perez/Sheila Vasquez/Alphonso Andrade/Marco Topete             |
| <input checked="" type="checkbox"/> Campo Band Of Mission Indians - Marcus Cuero/Jonathon Mesa  | <input checked="" type="checkbox"/> Ca Regional Water Quality Control Board- Emma McCorkle/ Kai Dunn/ Jose Cortez/ Kevin Gonzalez | <input checked="" type="checkbox"/> APCD – Monica Soucier/Belen Leon/Jesus Ramirez  |
| <input checked="" type="checkbox"/> Department Of Fish & Wildlife / Eastern Sierra Inland Desert Region - Renewable Energy Projects Only- Magdalena Rodriguez | <input checked="" type="checkbox"/> Department Of Conservation / Asst. Director Division Of Land Resource Protection- John Lowrie | <input checked="" type="checkbox"/> Dept. Of Fish & Wildlife / Region 6 - Renewable Energy Projects Only-Lily Mu/Eric Weiss |
| <input checked="" type="checkbox"/> Division Of Oil, Gas & Geothermal Resources Southern District- John Huff  | <input checked="" type="checkbox"/> Calgem/Geothermal Program Manager-Jerry Salera  | <input checked="" type="checkbox"/> Natural Resources Conservation Service-Carlos Suarez                                    |

From: Gerardo Quero Planner II - (442) 265-1736 or [gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)  
Project ID: CUP#24-0025 / IS#24-0036 APN 020-120-025-000  
Project Location: 6998 Kalin Road, Calipatria, CA 92233.

Project Description: The Applicant, Global Lithium Energy Corp., proposes the drilling of two (2) geothermal exploration wells on the southeast corner of property located 6998 Kalin Road, Calipatria, CA 92233. to demonstrate the commercial viability of geothermal resources. The proposed geothermal exploration project consists of two (2) geothermal exploration wells with a proposed depth of 500 to 6,000 feet, two (2) 350 by 200 feet well pads, a 300 by 300 feet move on area, within a fenced footprint of approximately 1,300 by 520 feet area.

Applicants: Global Lithium Energy Corp.

Comments due by: **November 8<sup>th</sup> 2024 at 5:00PM**

COMMENTS: (attach a separate sheet if necessary) (if no comments, please state below and mail, fax, or e-mail this sheet to Case Planner)  
No Comment

Name: Antonio Venegas Signature:  Title: Ag. Biologist/Standards Spec. IV  
Date: 11/08/2024 Telephone No.: 442-265-1500 E-mail: antoniovenegas@co.imperial.ca.us

GQ/KMS: \\MAILS\APP\020120025\CUP#24-0025\_IS#24-0036\APPLICATION PACKAGE\CUP24-00025-IS24-0036 Global Lithium Energy Corp Request for Comments.doc



November 8, 2024

**RECEIVED**

By Imperial County Planning & Development Services at 10:50 am, Nov 08, 2024

**VIA EMAIL ONLY**

Mr. Gerardo Quero  
Imperial County Planning and Development Services  
801 Main Street  
El Centro, CA 92243  
[ICPDScommentletters@co.imperial.ca.us](mailto:ICPDScommentletters@co.imperial.ca.us)

Dear Mr. Quero,

Re: COMMENTS FOR CUP#24-0025 / IS#24-0036 APN 020-120-025-000

The California Geologic Energy Management Division welcomes the opportunity to review the proposed project CUP#24-0025 / IS#24-0036 APN 020-120-025-00, a geothermal exploration program proposed by Global Lithium Energy Corp. to evaluate the geothermal resource at the project location.

Chapter 4 of Division 3 of the Public Resources Code (PRC) and Title 14 of the California Code of Regulations (CCR) set out requirements for geothermal wells and associated projects. Any party planning to drill and complete new geothermal wells or modify existing wells should comply with requirements stated therein, including but not limited to entity notification, well bonding, permitting requirements for well drilling, reworking, or abandonment, and the maintenance and operation of said wells.

We would like to offer the following comments:

1. The California Division of Oil Gas and Geothermal Resources (CDOGGR) has been renamed as the California Geologic Energy Management Division (CalGEM). CalGEM is incorrectly referenced as CDOGGR on page 3 in section 1 Project Overview, and on page 17 in section 9.2 Drilling & Staging.
2. The last paragraph on page 19 in section 9.3 Exploratory Well Construction and Testing Plan is incomplete. This paragraph includes reference to an injection test. It is possible that CalGEM may need to issue an approval for injection testing that is separate from the well drilling permit. However, the information presented in this paragraph seems to be incomplete to make that determination.

Imperial County PDS  
November 8, 2024  
Comments for CUP#24-0025

3. If the exploratory wells are reworked between completion of drilling operations and their plugging and abandonment, a rework permit may be required from CalGEM in accordance with requirements in the PRC based on the type of well work proposed.

If you have any questions, please contact me at [jerry.salera@conservation.ca.gov](mailto:jerry.salera@conservation.ca.gov) .

Sincerely,

*Jerry Salera*

Jerry Salera  
Senior Oil and Gas Engineer (Supv.)



COUNTY OF IMPERIAL

DEPARTMENT OF PUBLIC WORKS

155 S. 11th Street  
El Centro, CA 92243

Tel: (442) 265-1818  
Fax: (442) 265-1858

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<https://twitter.com/CountyDpw/>

Public Works works for the Public



November 20, 2024

RECEIVED

NOV 21 2024

IMPERIAL COUNTY DEPARTMENT OF PUBLIC WORKS

Mr. Jim Minnick, Director  
Planning & Development Services Department  
801 Main Street  
El Centro, CA 92243

Attention: Gerardo Quero, Planner II

**SUBJECT: CUP 24-0025 - Global Lithium Energy Corporation**  
Located on 6998 Kalin Road, Calipatria, CA 92233  
APN 020-120-025

Dear Mr. Minnick:

This letter is in response to your submittal received by this department on October 25, 2024, for the above-mentioned project. The applicant proposes the drilling of two (2) geothermal exploration wells on the southeast corner of the property to demonstrate the commercial viability of geothermal resources. The proposed geothermal exploration project consists of two (2) geothermal exploration wells with a proposed depth of 500 to 6,000 feet, two (2) 350 by 200 feed well pads, a 30 by 30 feet move on area, within a fenced foot print of approximately 1,300 by 520 feet area.

Department staff has reviewed the package information and the following shall be conditions of approval:

1. The Applicant shall furnish a Drainage and Grading Plan/Study to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. The Study/Plan shall be submitted to the Department of Public Works for review and approval. The applicant shall implement the approved plan. Employment of the appropriate Best Management Practices (BMP's) should be included (Per Imperial County Code of Ordinances, Chapter 12.10.020 B).
2. An encroachment permit shall be secured from this department for any construction and/or construction related activities within County Right-of-Way. Activities to be covered under an encroachment permit shall include the installation of, but not be limited to, stabilized construction entrances, driveways, road improvements, temporary traffic control devices, etc.
3. It appears that access to the site includes public and private unpaved roads. The applicant shall prepare a dust mitigation plan per Imperial County Air Pollution Control District requirements for private and public roads. Road improvements prior to construction may be allowed in leu of a mitigation plan.
4. Street improvements are required per imperial County Ordinance 12.10.020 including commercial driveway from Kalin Rd.
5. Project is located within FEMA flood zone A and shall comply with Imperial County Ordinance Title 9 Division 16 Chapter 5 as well as any applicable engineering practices.

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6. Prior to the issuance grading and building permits, a stabilized construction entrance shall be installed under an encroachment permit from this department.
7. The Developer shall repair any damage caused to County Roads during construction and maintain such roads in safe conditions as determined by the Imperial County Road Commissioner. Said road repairs shall be completed under an encroachment permit from this department.
8. All off-site improvements within Imperial County right-of-way shall be financially secured by either a road improvement bond or letter of credit as approved by this department. No encroachment, building or grading permits shall be issued until such time said financial security has been provided.
9. All permanent structures abutting public roads shall be located outside County right-of-way, public utility easements, and drainage easements.
10. All on-site traffic areas shall be hard surfaced to provide all weather access for emergency vehicles. The surfacing shall meet the Department of Public Works and Fire/Office of Emergency Services (EOS) Standards as well as those of the Air Pollution Control District (APCD).
11. Coordination with IID will be required for any work impacting their facilities.
12. A Transportation Permit may be required from road agencies having jurisdiction over the haul route(s) for any hauls of heavy equipment and/or large vehicles which impose greater than legal loads on riding surfaces, including bridges. (Per Imperial County Code of Ordinances, Chapter 10.12 – Overweight Vehicles and Loads).
13. The applicant shall prepare and submit a haul route study identifying a construction route along county roads from state routes to the site. The haul route study shall evaluate any impacts due to construction traffic to county roads. Said study shall be submitted to the Department of Public Works for review and approval. The haul route study shall include pictures and/or other documents to verify the existing conditions of the impacted county roads before construction begins. The haul route study shall also include recommended mitigation improvements to impacted county roads along with any fair share costs for such improvements. Construction engineering cost estimates shall be included with the study.
14. Construction traffic will access the site using either SR-78/86 from the south, SR-111 from the east, or both state routes before using county roads in the area. These county roads have bridges with limited load ratings with a few of them under legal load. The county road bridge ratings range from 62,000 lbs. to 197,000 lbs. The limited load ratings of the county bridges in the area have the potential to limit or even restrict construction access. The route to be identified on haul route study shall also take into account bridge load capacities versus the approximate weight of anticipated truck/transport loads and equipment.
15. The applicant shall enter into a Roadway Maintenance Agreement with the County of Imperial prior to issuance of a Certificate of Occupancy. The applicant shall provide financial security to maintain the roads on the approved haul route study during construction.

#### INFORMATIVE

- All solid and hazardous waste shall be disposed of in approved solid waste disposal sites in accordance with existing County, State and Federal regulations (Per Imperial County Code of Ordinances, Chapter 8.72).

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- The project may require a National Pollutant Discharge Elimination System (NPDES) permit and Notice of Intent (NOI) from the Regional Water Quality Control Board (RWQCB) prior county approval of onsite grading plan (40 CFR 122.28).

Should you have any questions, please do not hesitate to contact this office. Thank you for the opportunity to review and comment on this project.

Respectfully,

John A. Gay, PE  
Director of Public Works

By: 

Veronica Atondo, PE, PLS  
Deputy Director of Public Works - Engineering

EEC ORIGINAL PKG

## Gerardo Quero

---

**From:** Jill McCormick <historicpreservation@quechantribe.com>  
**Sent:** Tuesday, December 10, 2024 2:12 PM  
**To:** Gerardo Quero  
**Subject:** Re: [EXTERNAL]:CUP #24-0025 AB52

**CAUTION:** This email originated outside our organization; please use caution.

Thank you for the additional information Gerardo. I have no further questions or comments.

H. Jill McCormick, M.A.  
Historic Preservation Office  
Ft. Yuma Quechan Indian Tribe  
P.O. Box 1899  
Yuma, AZ 85366-1899  
Office: 760-919-3631  
Cell: 928-920-6521



---

**From:** Gerardo Quero <gerardoquero@co.imperial.ca.us>  
**Sent:** Tuesday, December 10, 2024 3:10 PM  
**To:** Jill McCormick <historicpreservation@quechantribe.com>  
**Subject:** RE: [EXTERNAL]:CUP #24-0025 AB52

Good afternoon Jill,  
Yes, the applicant is seeking approval for a CUP for the drilling and installation of up to two geothermal exploration wells.  
If no geothermal resources are found, such wells will be abandoned according to state guidelines.  
Should the exploration project be successful, the applicant would apply at a later time for a CUP involving the development of a Geothermal facility.  
Any questions, please feel free to contact me.

Regards

**EEC ORIGINAL PKG**



Gerardo A. Quero #345  
PLANNER II

Imperial County Planning & Development  
Services Department  
(442) 265-1736  
801 Main Street El Centro, CA 92243

---

**From:** Jill McCormick <[historicpreservation@quechantribe.com](mailto:historicpreservation@quechantribe.com)>  
**Sent:** Tuesday, December 10, 2024 1:24 PM  
**To:** Gerardo Quero <[gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)>  
**Subject:** Re: [EXTERNAL]:CUP #24-0025 AB52

**CAUTION:** This email originated outside our organization; please use caution.

Good afternoon Gerardo,  
I wanted to ask a question about the proposed project. Is this application only for the installation of the two geothermal exploration wells? This is the only approval that is being determined at this time, correct?

Jill

H. Jill McCormick, M.A.  
Historic Preservation Office  
Ft. Yuma Quechan Indian Tribe  
P.O. Box 1899  
Yuma, AZ 85366-1899  
Office: 760-919-3631  
Cell: 928-920-6521



---

**From:** Gerardo Quero <[gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)>  
**Sent:** Tuesday, December 10, 2024 11:01 AM  
**To:** Jill McCormick <[historicpreservation@quechantribe.com](mailto:historicpreservation@quechantribe.com)>  
**Subject:** RE: [EXTERNAL]:CUP #24-0025 AB52

**EEC ORIGINAL PKG**

Morning Jill,  
I'll wait for your comments.

Regards and thanks in advance.



**Gerardo A. Quero #345**

**PLANNER II**

Imperial County Planning & Development  
Services Department

**(442) 265-1736**

801 Main Street El Centro, CA 92243

---

**From:** Jill McCormick <[historicpreservation@quechantribe.com](mailto:historicpreservation@quechantribe.com)>

**Sent:** Tuesday, December 10, 2024 9:33 AM

**To:** Gerardo Quero <[gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)>

**Subject:** Re: [EXTERNAL]:CUP #24-0025 AB52

**CAUTION:** This email originated outside our organization; please use caution.

I am still going through the information and trying to meet with our Cultural Committee to get their input.

H. Jill McCormick, M.A.  
Historic Preservation Office  
Ft. Yuma Quechan Indian Tribe  
P.O. Box 1899  
Yuma, AZ 85366-1899  
Office: 760-919-3631  
Cell: 928-920-6521



---

**From:** Gerardo Quero <[gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)>

**Sent:** Tuesday, December 10, 2024 10:14 AM

**To:** Jill McCormick <[historicpreservation@quechantribe.com](mailto:historicpreservation@quechantribe.com)>; Jenyssa Gutierrez <[jenyssagutierrez@co.imperial.ca.us](mailto:jenyssagutierrez@co.imperial.ca.us)>

**Subject:** RE: [EXTERNAL]:CUP #24-0025 AB52

**EEC ORIGINAL PKG**

Good morning Jill,

I'd like to check if the Quechan Tribe would have any comments in reference to this project.

Attached, please find copy of AB52 letter as well as the packet requesting comments for CUP#24-0025 sent in October 25.

Please let me know if you have any questions.

Regards and thanks in advance.



**Gerardo A. Quero #345**

**PLANNER II**

Imperial County Planning & Development  
Services Department

**(442) 265-1736**

801 Main Street El Centro, CA 92243

---

**From:** Jill McCormick <[historicpreservation@quechantribe.com](mailto:historicpreservation@quechantribe.com)>

**Sent:** Monday, October 28, 2024 7:51 AM

**To:** Jenyssa Gutierrez <[jenyssagutierrez@co.imperial.ca.us](mailto:jenyssagutierrez@co.imperial.ca.us)>; Gerardo Quero <[gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)>

**Subject:** RE: [EXTERNAL]:CUP #24-0025 AB52

**CAUTION:** This email originated outside our organization; please use caution.

Good morning,

Pursuant to Assembly Bill 52 and Public Resources Code Section 21080.3.1 (d), the Historic Preservation Office of the Ft. Yuma-Quechan Tribe is requesting consultation for the (CUP #24-0025) Project.

*Thank you,*

*J. Jill McCormick, M.A.*

Historic Preservation Office  
Ft. Yuma Quechan Indian Tribe  
P.O. Box 1899  
Yuma, AZ 85366-1899  
Office: 760-919-3631  
Cell: 928-920-6521

**EEC ORIGINAL PKG**



**From:** Jenyssa Gutierrez <[jenyssagutierrez@co.imperial.ca.us](mailto:jenyssagutierrez@co.imperial.ca.us)>  
**Sent:** Friday, October 25, 2024 4:45 PM  
**To:** Jill McCormick <[historicpreservation@quechantribe.com](mailto:historicpreservation@quechantribe.com)>; Tribal Secretary <[tribalsecretary@quechantribe.com](mailto:tribalsecretary@quechantribe.com)>  
**Cc:** Jim Minnick <[JimMinnick@co.imperial.ca.us](mailto:JimMinnick@co.imperial.ca.us)>; Michael Abraham <[MichaelAbraham@co.imperial.ca.us](mailto:MichaelAbraham@co.imperial.ca.us)>; Diana Robinson <[DianaRobinson@co.imperial.ca.us](mailto:DianaRobinson@co.imperial.ca.us)>; Gerardo Quero <[gerardoquero@co.imperial.ca.us](mailto:gerardoquero@co.imperial.ca.us)>; Aimee Trujillo <[aimeetrujillo@co.imperial.ca.us](mailto:aimeetrujillo@co.imperial.ca.us)>; Jenyssa Gutierrez <[jenyssagutierrez@co.imperial.ca.us](mailto:jenyssagutierrez@co.imperial.ca.us)>; Kamika Mitchell <[kamikamitchell@co.imperial.ca.us](mailto:kamikamitchell@co.imperial.ca.us)>; Kayla Henderson <[kaylahenderson@co.imperial.ca.us](mailto:kaylahenderson@co.imperial.ca.us)>; Laryssa Alvarado <[laryssaalvarado@co.imperial.ca.us](mailto:laryssaalvarado@co.imperial.ca.us)>; Marsha Torres <[marshatorres@co.imperial.ca.us](mailto:marshatorres@co.imperial.ca.us)>; Olivia Lopez <[olivialopez@co.imperial.ca.us](mailto:olivialopez@co.imperial.ca.us)>; Valerie Grijalva <[valeriegrijalva@co.imperial.ca.us](mailto:valeriegrijalva@co.imperial.ca.us)>  
**Subject:** [EXTERNAL]:CUP #24-0025 AB52

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

Attached hereto please find the AB52 letter for CUP #24-0025. Letter has also been sent out via regular mail.

Should you have any questions, please feel free to contact planner Gerardo Quero (442) 265-1736 or via email at [Gerardoquero@co.imperial.ca.us](mailto:Gerardoquero@co.imperial.ca.us)

Thank you,

*Jenyssa Gutierrez*

**Office Assistant III**  
**Imperial County Planning and Development Services**  
801 Main Street  
El Centro, CA 92243  
(442)-265-1736



**EEC ORIGINAL PKG**

# **ATTACHMENT #2**

**CONDITIONAL USE PERMIT #24-0025**

**APPLICATION PACKAGE**

**EEC ORIGINAL PKG**

# CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.  
801 Main Street, El Centro, CA 92243 (442) 265-1736

- APPLICANT MUST COMPLETE ALL NUMBERED (black) SPACES - Please type or print -

1. PROPERTY OWNER'S NAME Russell Bros. Ranches, Inc.	EMAIL ADDRESS debra@palominolawaz.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 4296 Forrester Road, Brawley CA	ZIP CODE 92227	PHONE NUMBER (602) 277-9791
3. APPLICANT'S NAME Global Lithium Energy Corp,	EMAIL ADDRESS admin@glecusa.com	
4. MAILING ADDRESS (Street / P O Box, City, State) 220 Progress, #240, Irvine CA.	ZIP CODE 92618	PHONE NUMBER (949) 617-5201
4. ENGINEER'S NAME Dubose Design Group/ LC Engineering	CA. LICENSE NO	EMAIL ADDRESS tom@dubosedesigngroup.com
5. MAILING ADDRESS (Street / P O Box, City, State) 1065 West State Street	ZIP CODE 92243	PHONE NUMBER (760) 353-8110
6. ASSESSOR'S PARCEL NO 020-120-025	SIZE OF PROPERTY (in acres or square foot) +/-320 Acres	ZONING (existing) A-2-G
7. PROPERTY (site) ADDRESS		
8. GENERAL LOCATION (i.e. city, town, cross street) The project site is bounded on the east by Dewey Road and the west by Hatfield Road, both of which are unpaved county roads. Kalin Road, a paved county road.		
9. LEGAL DESCRIPTION Parcel 1 - Lots 3 and 4 and the south 1/2 of the NE 1/4 of sec 2T 12 S, R13E and Parcel 2, Lots 5 and 6 and the south of the NW 1/4 of Sec 1 T12 S, R 13E		

**PLEASE PROVIDE CLEAR & CONCISE INFORMATION (ATTACH SEPARATE SHEET IF NEEDED)**

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail)	The applicant is seeking a Conditional Use - Permit for the purpose of resource exploration via a test well.
11. DESCRIBE CURRENT USE OF PROPERTY	Agricultural Use
12. DESCRIBE PROPOSED SEWER SYSTEM	N/A
13. DESCRIBE PROPOSED WATER SYSTEM	IID Canal Vail Lateral 2
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	IID Canal
15. IS PROPOSED USE A BUSINESS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? 3-5 employees

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT

Sang Jun Baek, CEO Global Lithium Energy Corp. 09/05/2024

Print Name \_\_\_\_\_ Date \_\_\_\_\_

Signature \_\_\_\_\_

Print Name \_\_\_\_\_ Date \_\_\_\_\_

Signature \_\_\_\_\_

**REQUIRED SUPPORT DOCUMENTS**

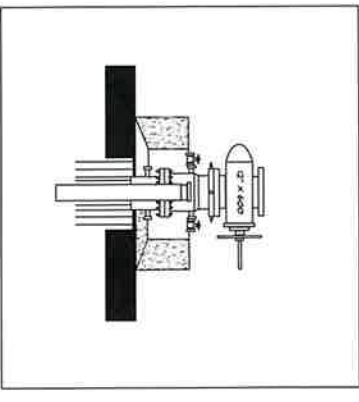
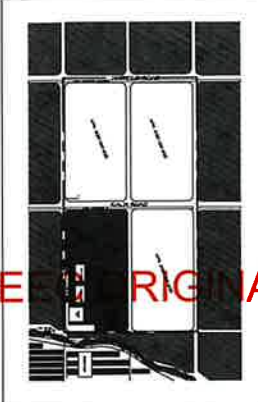
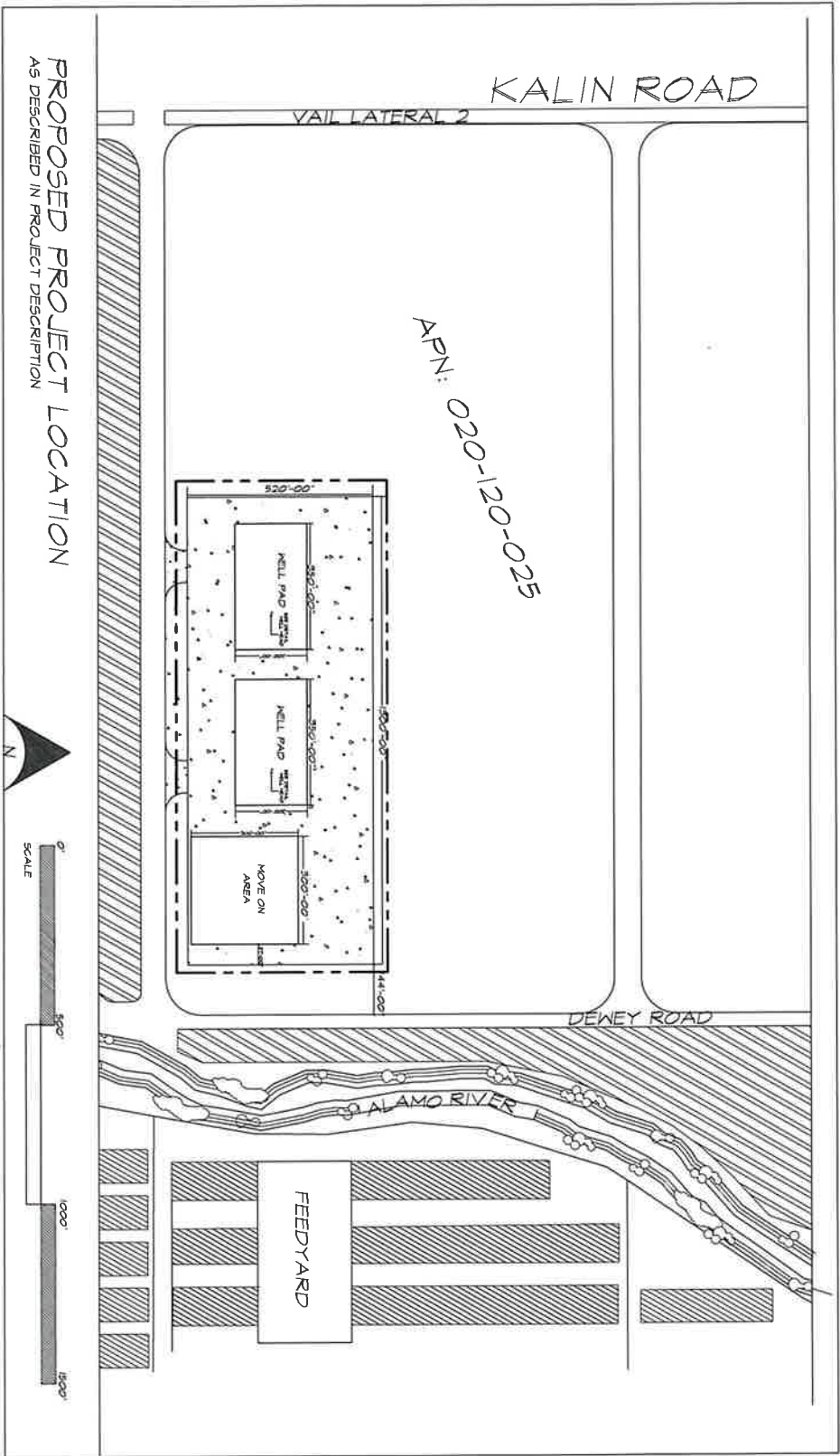
A. SITE PLAN	_____
B. FEE	_____
C. OTHER	_____
D. OTHER	_____

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"/> _____
APPLICATION DEEMED COMPLETE BY: _____	DATE _____	
APPLICATION REJECTED BY: _____	DATE _____	
TENTATIVE HEARING BY: _____	DATE _____	
FINAL ACTION: <input type="checkbox"/> APPROVED <input type="checkbox"/> DENIED	DATE _____	

**CUP #**  
\_\_\_\_\_

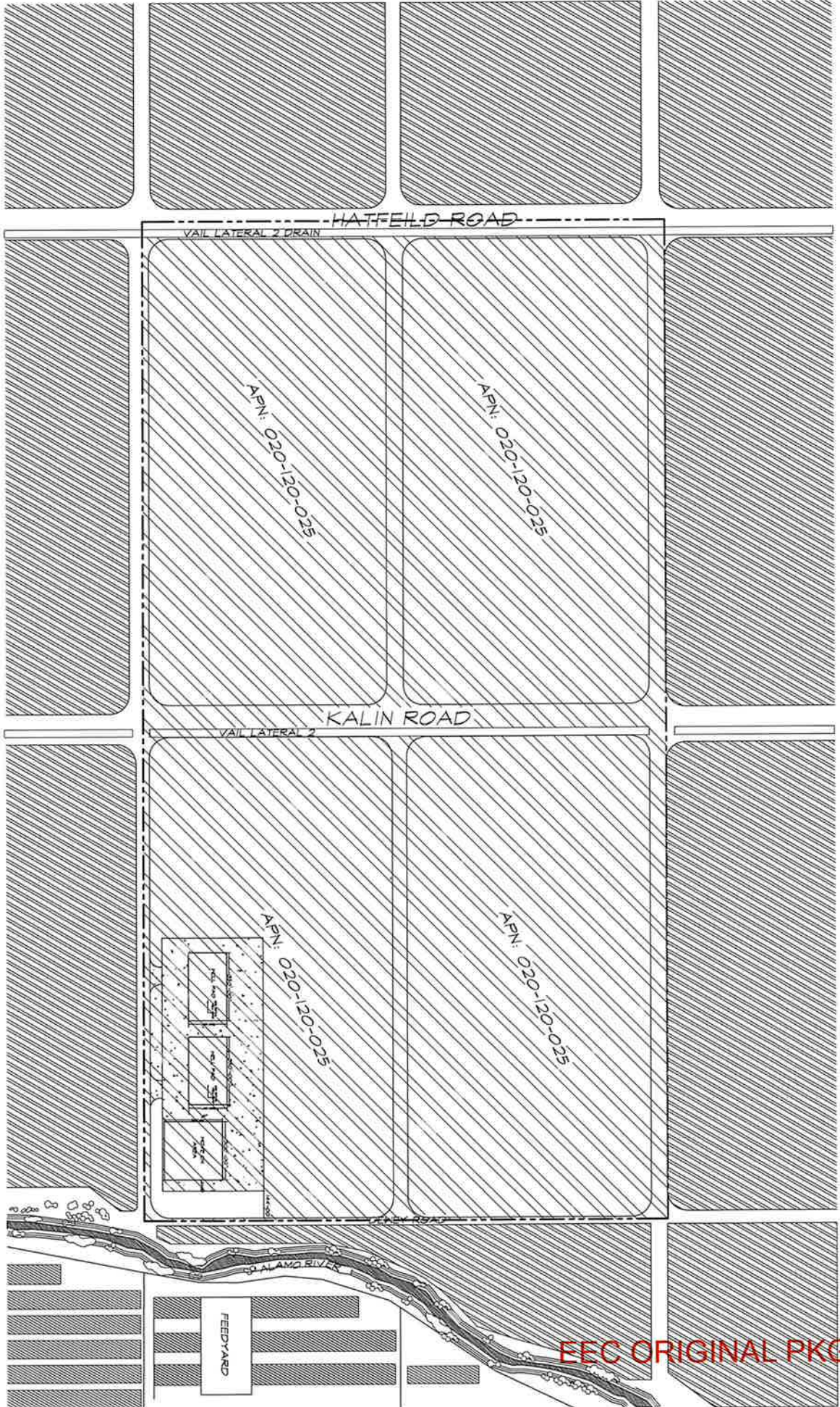
**EEC ORIGINAL PKG**





ORIGINAL PKG

GLEC CONCEPTUAL SITE PLAN



EEC ORIGINAL PKG



# **Global Lithium Energy**

## **GEOHERMAL EXPLORATION PROGRAM**

### **CUP APPLICATION PREPARED FOR IMPERIAL COUNTY**

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# 1. Project Overview:

At this stage in Global Lithium Energy Corp.'s (GLEC) development plan, GLEC aims to implement an exploration and evaluation program to demonstrate the commercial viability of the geothermal resource on its leasehold. The scope of work includes:

- **Civil Works:** Creation of access paths to well pads and construction of well pads.
- **Well Pad Locations:** Two pad locations are proposed to provide flexibility in the exploration program. The minimum number of pads will be constructed. If the resource can be proven from a single pad, only one pad will be constructed. If more are required, up to two well pads and two wells could be built.
- **Drilling:** Exploration wells will be drilled from the well pads. The development preference is to start with pad 1. If necessary, pad 2 will be used as a secondary option.
- **Well Evaluation:** After construction, the exploration wells will be evaluated using wireline logs and downhole sampling tools, followed by a limited production flow test. Produced brine will be stored in holding tanks and reinjected after each segment depth test.
- **Brine Testing:** Once drilled to an estimated depth of 6,000 feet, a small but continuous brine flow will be taken from the well, assuming it is artesian in nature. A sample of the produced brine will be sent to regional certified laboratories for additional analysis.

The proposed exploratory wells aim to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploratory wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible.

If the exploration program is successful and the data indicate viable resource development, the exploration wells will transition into the permitting phase for full-scale field development as geothermal extraction/return injection wells. If the program is unsuccessful, the exploration wells will be plugged and abandoned in accordance with California Division of Oil, Gas, and Geothermal Resources (CDOGGR) requirements. Further details on the geothermal exploration are included in AECOM's Exploratory Well 1 Study.

To prepare for the exploration program, beginning with the permitting process, GLEC has collaborated with local partners in Imperial County. These partners include:

1. **LC Engineering:** Responsible for land surveying and topographic mapping. Their work focuses on locating property corners and setting targets in preparation for aerial mapping. This work is limited to the outer edge of the property, using existing roads or pathways to move between points for locating corners and setting targets.
2. **LandMark Geo-Engineers & Geologists:** Tasked with preparing geologic and geotechnical hazards evaluation for the project location. The scope of work includes providing seismic design parameters to the current 2021 CBC, reviewing available publications on site and regional geology, and assessing records concerning groundwater, subsidence, seismic activity, faulting, flooding, slope stability, and other geological hazards.

3. **AECOM:** Responsible for conducting geothermal resource assessment and test well design, including the engineering and construction requirements in compliance with relevant local, state, and federal regulations.

## 2. Location:

The GLEC geothermal exploration project is located on Assessor's Parcel APNs 020-120-025, along the Alamo River in Imperial County, California, approximately 6.5 miles southeast of the townsite of Niland, CA and 4 miles northeast of the City of Calipatria, CA. The project site consists of agricultural use land divided into four 80-acre fields. The project site is bounded on the east by Dewey Road and the west by Hatfield Road, both of which are unpaved county roads. Kalin Road, a paved county road, crosses north-south through the middle of the project site. Dirt field roads and concrete lined irrigation ditches form the northern and southern property boundaries. The Alamo River is located east of the project site beyond which is the Brandt Cattle feedlot. The project site is flat and ranging in elevation from 210 to 215 feet below mean sea level (MSL). A surface disturbance identified as the Katlin Fault Trace transects the northwest section of the project site (Landmark, 2024), as described in Figure 1 and Figure 2.

Figure 1: Vicinity Map

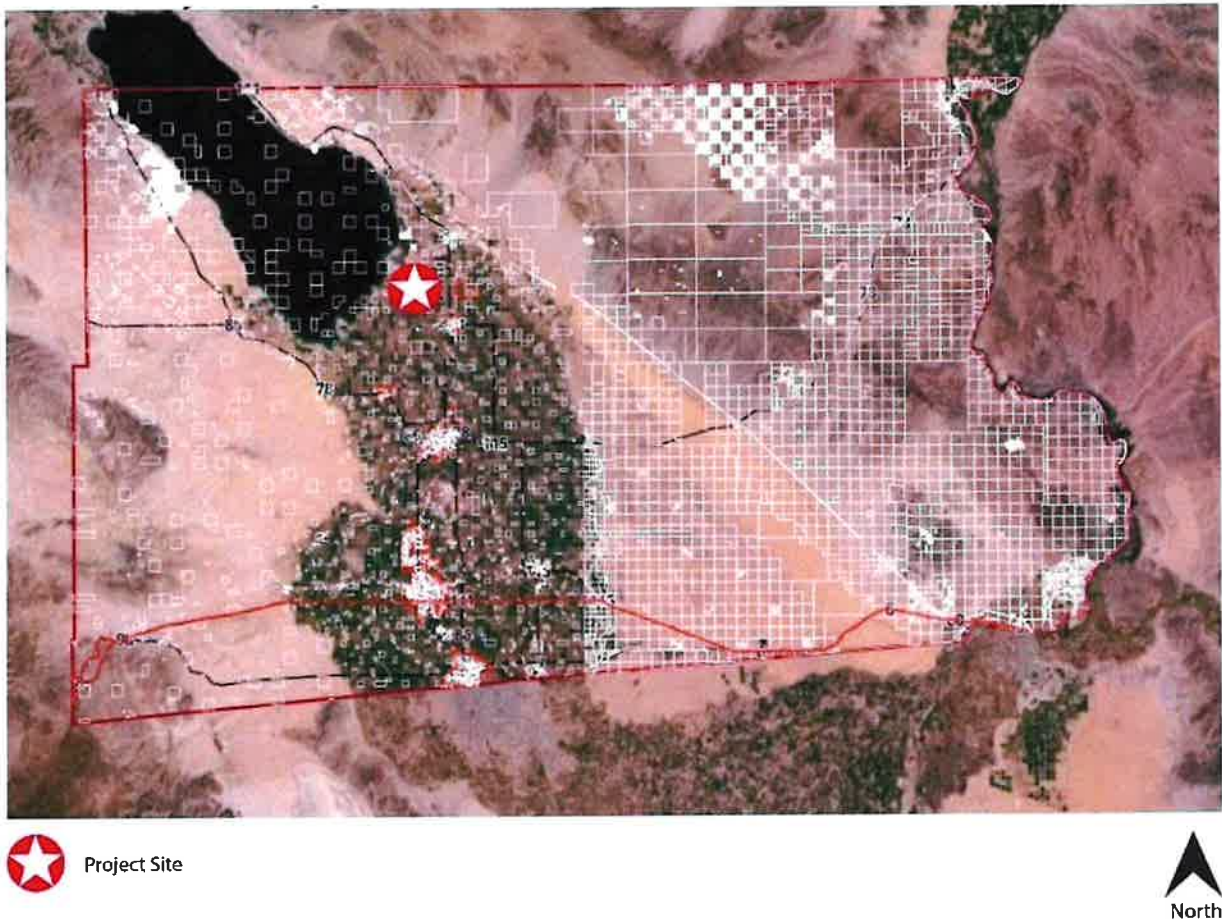


Figure 2: Project Site



Dubose Design Group, 2024

Figure 2 above illustrates the project site, which encompasses 320 acres. GLEC proposes to construct two exploration wells on one building pad as well as a “Move-On” area for contractors and staging on the south west portion of the project site, consisting of approximately 80 acres. Water for the site will be acquired from the current gate and canal from which APN receives water currently. The parcel receives water from IID’s Vail Lateral 1 Canal, Gates 123, and 124.

### 3. Environmental Considerations

GLEC conducted an analysis of geologic, hydrogeologic, and geothermal lithium content, as well as an associated Area of Review evaluation, using publicly available information within a 10-mile radius of the proposed well site. This analysis aimed to better understand the existing conditions and limitations related to the proposed geothermal exploration well project on Kalin Road, approximately 1 mile south of Sinclair Road, northwest of Calipatria, California (see Appendix A).

## 4. Regional Geologic Settings

The Imperial Valley occupies the southern, wider part of the Salton Trough. On the northwest, the valley is bordered by the Salton Sea; and on the southeast, it is contiguous with the Mexicali Valley in Mexico and the part of the Colorado River delta that is above sea level. The Chocolate Mountains are in the northeast, and the Peninsular Range of Baja California and southern California is in the southwest. The land surface slopes northwestward from about sea level at the international boundary to the Salton Sea, 50 miles distant. Several shorelines of prehistoric Lake Cahuilla, at 42 to 50 feet above mean sea level, are well-preserved features in both the eastern and the western parts of the valley.

Most of central Imperial Valley is a monotonous plain dissected by two major drainages, the Alamo and New Rivers that have cut trenches as much as 40 feet deep in the soft silty lacustrine deposits. Much of the incising into the surface sediment took place during 1905-7, when almost the entire Colorado River flowed uncontrolled in these channels and established the present-day Salton Sea.

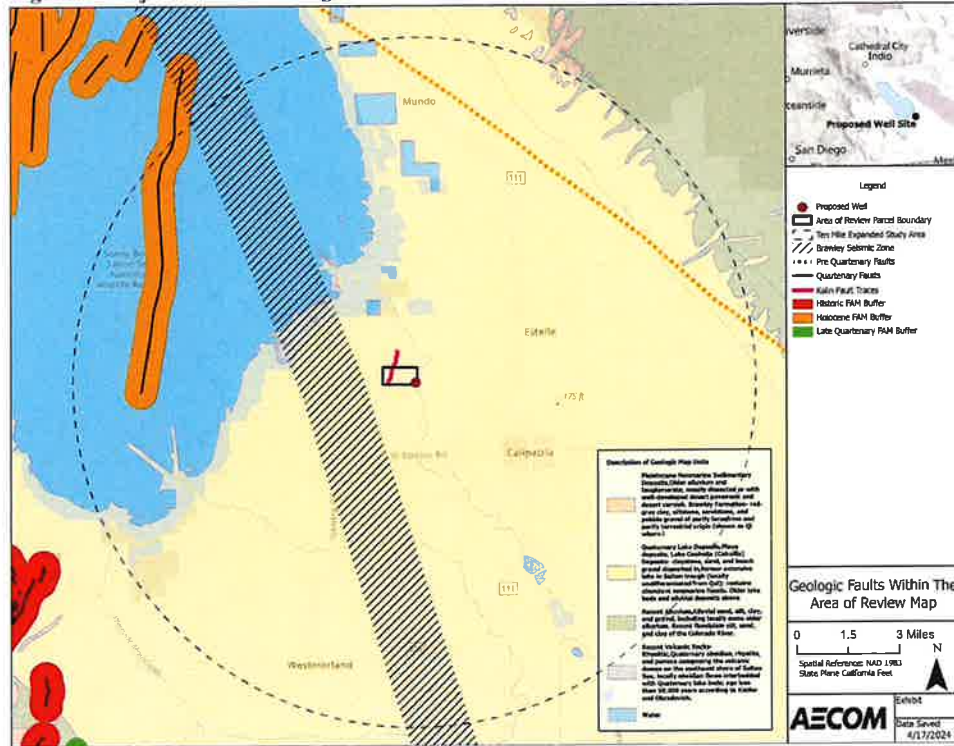
The Salton Sea Geothermal Field (SSGF) has been explored since 1927, and in commercial production since 1982. The SSGF is a robust geothermal field, primarily because of its structural setting. The SSGF is located in the Salton Trough, a tectonically active sedimentary pull-apart basin that occurs at the southern tip of the San Andreas fault system as it steps over into the continental rift zone between the Pacific and North American Plates. The Salton Trough, south into the Gulf of California, is dominated by a series of smaller scale pull-apart basins of different sizes that connect right-stepping, primarily right-lateral, strike-slip faults that strike generally northwest (Figure 2). This pattern of faulting forms in trans-tensional shear zones where there are structures related to both strike-slip (N-S) and east-west extensional movement.

Tectonically, the formation of the SSGF is influenced not only by the step-over from the San Andreas fault (SAF) to the Imperial fault (IF), but also by the San Jacinto fault zone (SJFZ) which runs up the west side of the Salton Sea, which joins the SAF to the north (see Figure 2). This impedes the northern movement of the Pacific Plate between the SAF and SJFZ zone, transferring most of the northern motion west of the SJFZ. This imparts rotation of a larger

land area and increases the complexity, forming two spreading centers within this area (Brothers et al., 2009). This region forms a tectonic transition from the divergent plate boundary of the East Pacific Rise, in the south, to the transform plate boundary of the San Andreas Fault in the north. This tectonic regime is one of the few places where an oceanic spreading center is acting on a continent today (Elders et al. 1972).

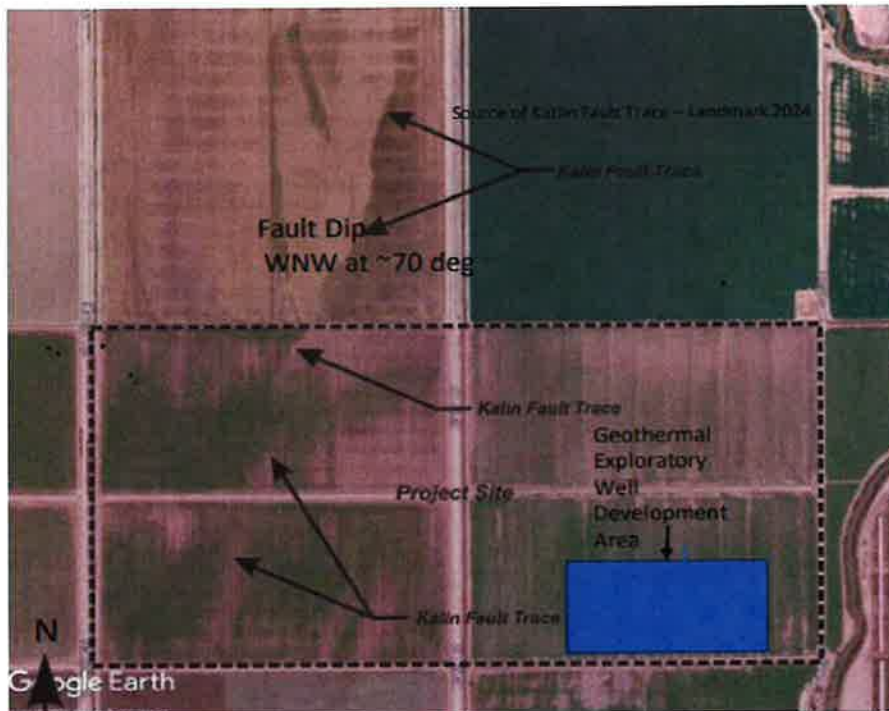


Figure 3: Project Site and Geologic Faults 5 Mile Radius



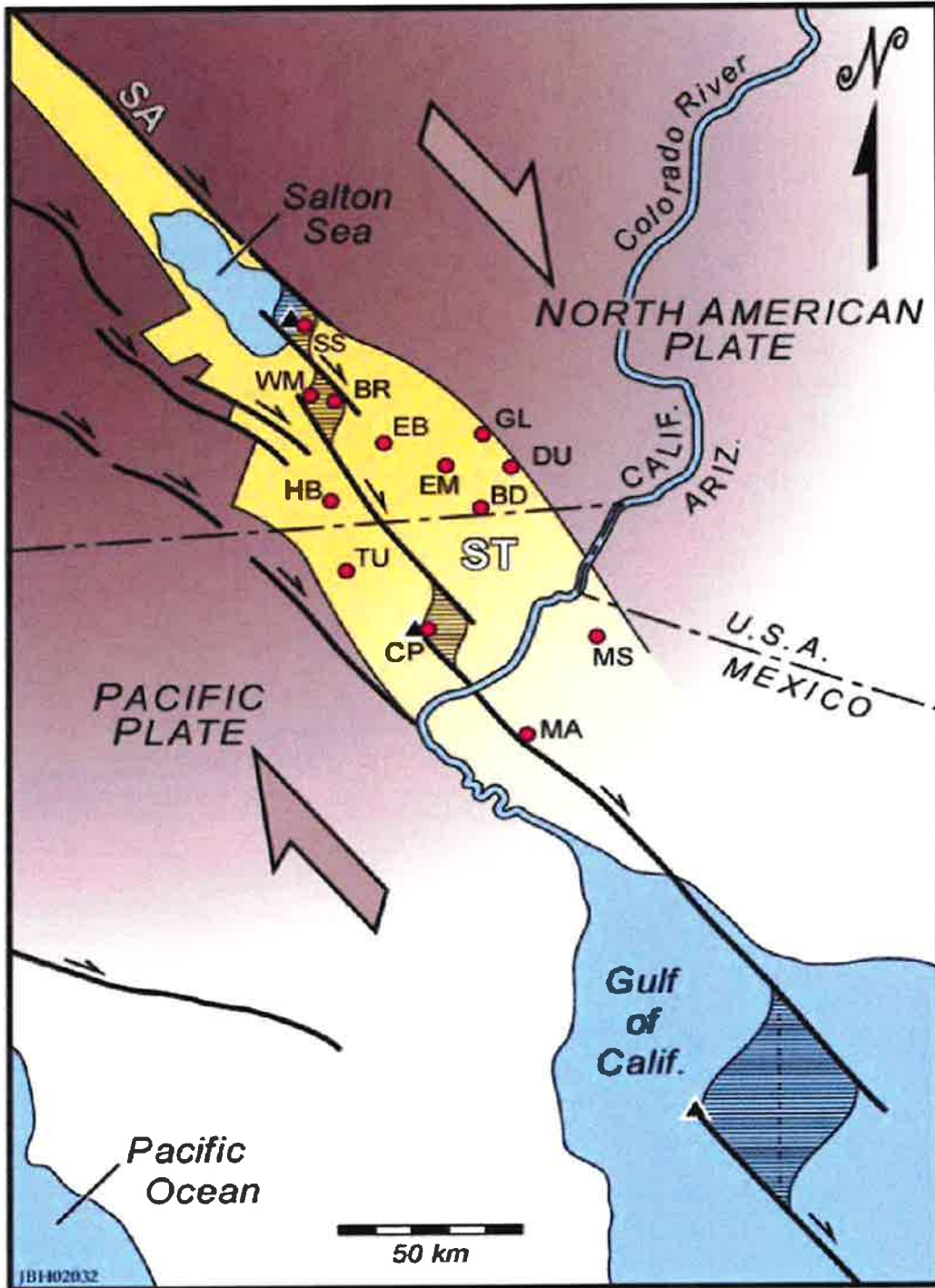
AECOM 2024

Figure 4: Project Fault Location Map



AECOM 2024

Figure 5: Fault Lines in the Imperial County



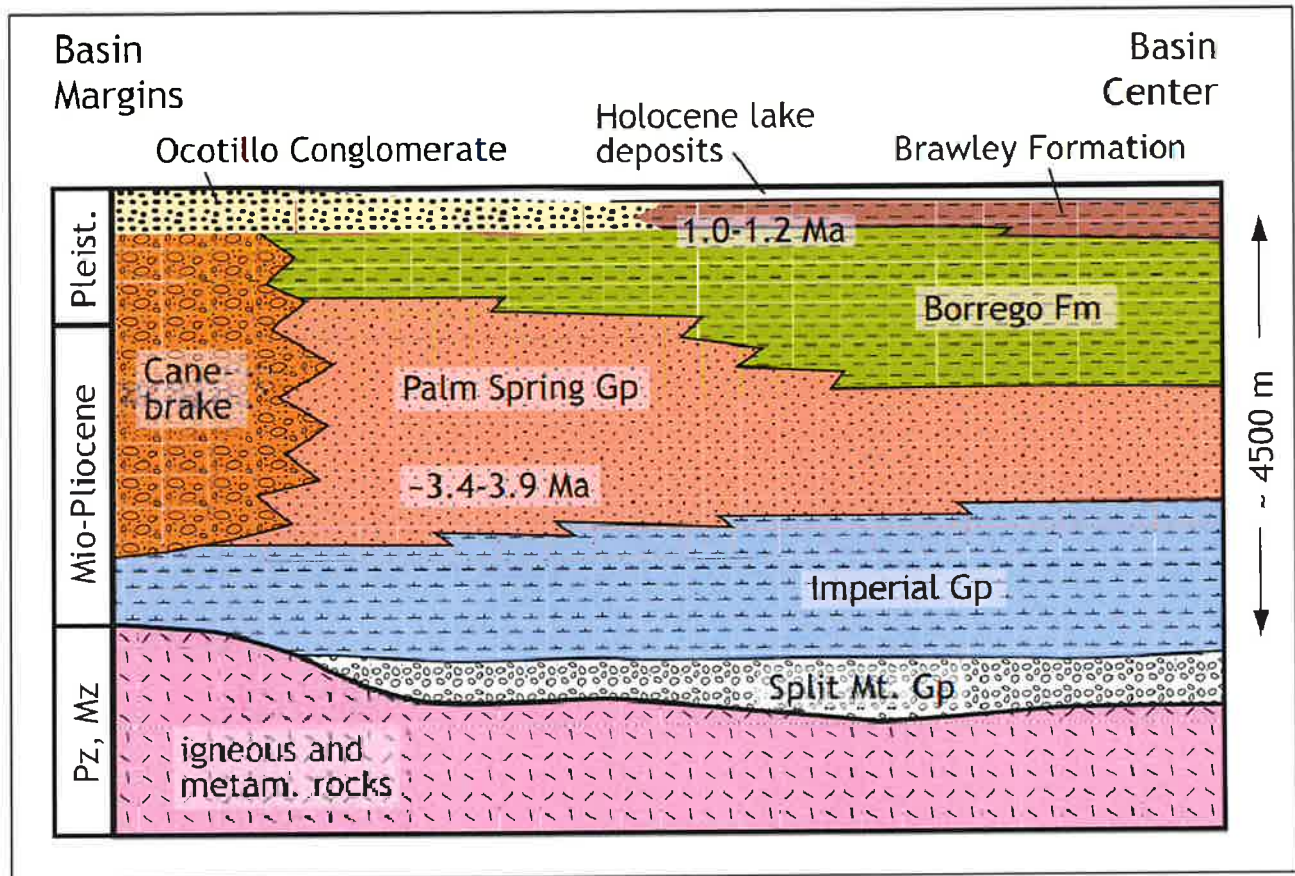
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## 5. Geologic Units Underlying Imperial Valley

The Imperial County is comprised of many geologic formations including the following:

- Mecca Formation** Metasedimentary and metavolcanic rocks tentatively correlated with the Mecca Formation have been identified at several localities in Imperial County. The rocks of this unit in Imperial County are composed of metasandstone, metaconglomerate, phyllite, meta-andesite, other metavolcanic rocks, and minor limestone; phyllite is the most common of these. Areas underlain by this formation are characteristically dark gray or gray-green and tend to have rounded, subdued topography. A probable late Paleozoic or Triassic age was assigned to the McCoy Formation by Miller (1944, p. 52).
- [Geological Period: Mesozoic]
- Igneous Rock** Igneous rocks related to the southern California batholith of probable Cretaceous age are widespread in Imperial County as they are elsewhere in the inland provinces of California. The separate mountainous areas of the western Imperial Valley such as Signal Mountain, Superstition Mountain, Fish Creek, Vallecito, and Santa Rosa Mountains are underlain by bodies of diorite, quartz diorite, and gabbro. Plutonic rocks in the Chocolate Mountains are predominantly granite and quartz monzonite. Quartz diorite from Superstition Mountain has been determined by lead alpha dating methods to be 155 million years  $\pm$  10 percent, or Jurassic to Late Triassic in age (Bushee et al., 1963, p. 805).
- [Geological Period: Cretaceous]
- Sedimentary** The Tertiary and Quaternary sedimentary and volcanic rocks occur in Imperial County. In the Imperial Valley, the Cenozoic rock sequences comprises more than 20,000 feet of nonmarine, marine and volcanic rocks representing accumulation since the Miocene that occurred in a very broad basin that generally corresponds to the present drainage basin of Imperial-Coachella Valley (Rex, 1970, Dibblee, 1954).
- [Geological Period: Cenozoic]
- Imperial Formation** The last major marine invasion of the Salton Trough is probably represented by the Imperial Formation. The Imperial Formation is the **only dominantly marine** formation known to occur in Imperial County. The Imperial Formation has been reported but not confirmed in numerous exploratory oil/gas and geothermal wells throughout Imperial Valley. The marine origin of the Imperial Formation is associated with influx of seawater and sediment from the ancestral Gulf of California. It is composed predominantly of yellow and gray claystone with interbedded sandstone, and oyster-shell reefs. The lower 5 to 200 feet consists of sandstone and conglomerate. Thickness of the formation is as much as 3,700 feet on the north side and 2,700 feet on the south side of Carrizo Creek in the Fish Creek Mountains and 2,800 feet thick in drill holes near Obsidian Butte at the east side of Imperial Valley (Dibblee, 1954). The age of the Imperial Formation has been determined to be late Miocene to middle Pleistocene. The Imperial Formation grades laterally and upward into the Palm Spring Formation (Christensen, 1957, Durham, 1954, Woodard, 1961).
- Palm Springs Formation** The Palm Spring Formation conformably overlies the Imperial Formation, which grades upward into it. The Palm Springs Formation is composed of a thick sequence of interbedded light-gray non-marine arkosic sandstone and reddish clay. A brackish water delta facies of the Palm Spring Formation has been reported underlying the Borrego Formation in geothermal steam wells at the southeast end of the Salton Sea. The Palm Spring Formation is 6,500 feet thick north of Carrizo Creek and 4,800 feet thick south of Carrizo Creek. It thins to the west where it grades into Canebrake Conglomerate. It has been dated and ranges from middle Pliocene to middle Pleistocene.
- Canebrake Conglomerate** The Canebrake Conglomerate is the coarse marginal facies of both the Imperial and Palm Spring Formations. Imperial County is composed of conglomerate containing mostly granitic and metamorphic debris. As Canebrake Conglomerate transcends the Imperial and Palm Spring Formations, it is mostly of Pliocene age, but the upper parts may be as young as Pleistocene.
- Borrego Formation** The Borrego Formation is the lacustrine facies of the Palm Spring Formation. It crops out west of the south end of the Salton Sea and is exposed along the east shore of the Salton Sea and west of the San Andreas fault. It is composed of gray clay with interbedded sandstone and contains a lacustrine fauna including minute mollusks, ostracods, and foraminifera. The Borrego Formation is probably late Pliocene to middle Pleistocene on the basis of a vertebrate fauna (Dibblee, 1954).
- Ocotillo Conglomerate** The Ocotillo Conglomerate consists of as much as 1,000 feet of gray granitic pebble conglomerate. This formation is in the Pleistocene or possibly late Pliocene age. The formation lies unconformably upon the Borrego and Palm Spring Formations and grades eastward into the Brawley Formation. In Imperial County it crops out just north of State Highway 78, at the eastern end of Superstition Mountain, and in the valley east of the Coyote Mountains.
- Brawley Formation** The Brawley Formation represents the lacustrine facies of the Ocotillo Conglomerate. This formation, which consists of about 2,000 feet of light gray clays, sandstone, and pebble gravels, is very similar to the Borrego Formation but is younger. The Brawley Formation is dated as Pleistocene or late Pliocene (Dibblee, 1954). The Brawley Formation is generally included in the unit designated as Lake deposits.
- Quaternary Lacustrine Beds** Most of the central parts of the Imperial Valley is more than 40 feet below sea level and are underlain by clay and silt deposits of ancient Lake Cahuilla. Shoreline deposits a few hundred feet wide encircle the Salton Basin. These units consist predominantly of unconsolidated sand and fine gravel. Basin ward these grades into silt and clay. In general Lake Cahuilla beds are believed to be less than 100 feet thick that originated by periodic overflow and diversion of the Colorado River into the Salton Basin.
- Quaternary Volcanics** Volcanic domes composed of rhyolitic, pumice and obsidian intrude and overlie lake beds of the Brawley Formation at the southeastern shore of the Salton Sea. These domes are aligned in a north-northeast trending arc about 4 miles long, which approximates the present southeast shoreline of the Salton Sea. The alignment of the domes suggests they may lie along a fault or a zone of weakness. These volcanic rocks are younger than the Brawley lake beds sediment and exposed to the wave-cutting action of at least one stage of ancient Lake Cahuilla. In addition, the high geothermal gradient and presence of carbon dioxide and steam as well as weak discharge of gases from joints and fractures in the domes, suggest that these intrusions are still cooling. The age of these domes, as determined from obsidian samples from Obsidian Butte, was 16,000 years (Muffler and White, 1969). The geologic units described above and their vertical and lateral interrelationships in the Imperial Valley are shown in **Figure 6**, below.

Figure 6 Geologic Units Described- Vertical and Lateral Interrelationships -Imperial Valley



## 6. Groundwater Resources

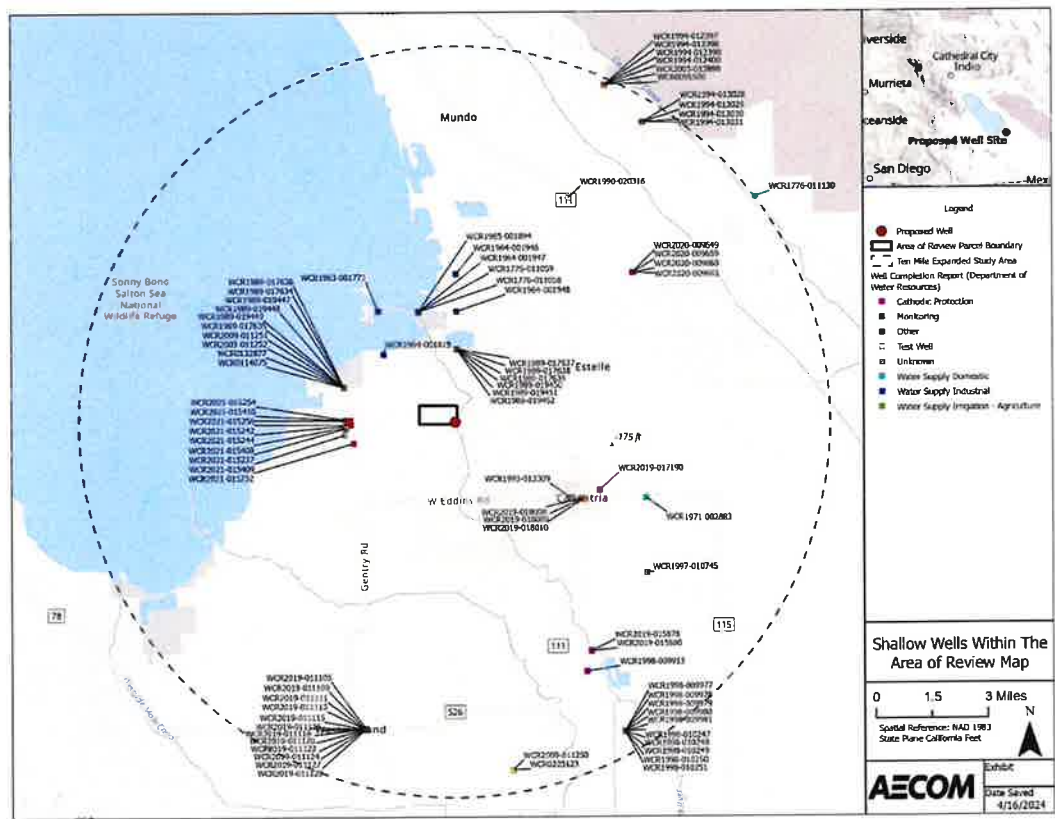
The Imperial Valley groundwater basin has two major aquifers, separated at depth by a semi-permeable aquitard that averages 60 feet thick and reaches a maximum thickness of 280 feet. The aquifers consist mostly of alluvial deposits of late Tertiary and Quaternary age. Average thickness of the upper aquifer is 200 feet with a maximum thickness of 450 feet. The lower aquifer averages 380 feet thick with a maximum thickness of 1,500 feet. As much as 80 feet of fine-grained, low permeability prehistoric lake deposits have accumulated on the nearly-flat valley floor and cause locally confined aquifer conditions (Montgomery Watson 1995). Recharge to the groundwater system is primarily from surface water irrigation return. Other recharge sources are deep percolation of rainfall and surface runoff, underflow into the basin, and seepage from unlined canals, which traverse the valley (CDPW 1954). Groundwater within the basin generally flows toward the axis of the valley and then northwestward towards the Salton Sea. (Montgomery Watson 1995). Water levels vary widely within the basin due to differing hydraulic heads and the localized confining clay beds in the area (Brown 1923).

The groundwater resources are derived principally from a heterogeneous sequence of nonmarine sediment deposits in the upper few thousand feet of the groundwater reservoir. At depths greater than a few thousand feet, the groundwater commonly is too saline for irrigation and most other uses, and the hydraulic connection between the water in the deeper deposits and the water in the upper part of the ground water reservoir is poor. Short-term pumping tests at several sites indicate that in both the eastern and the western parts of the Imperial Valley moderate to high yields can be obtained from

wells that tap several hundred feet of the marginal alluvial deposits of the Ocotillo Conglomerate or deposits of the Colorado River. Transmissivities of several hundred thousand gallons per day per foot are characteristic of these deposits. Wells with specific capacities of 50 gallons per minute per foot of drawdown or more may be attainable in the more favorable areas. In contrast, the fine-grained deposits that are characteristic of the central part of Imperial Valley are likely to have transmissivities of only 1,000 to 10,000 gallons per day per foot to depths of approximately 500 feet. At greater depths, transmissivities are likely to be even less for a similar thickness of deposits due to greater overburden pressure and compaction of the sediments.

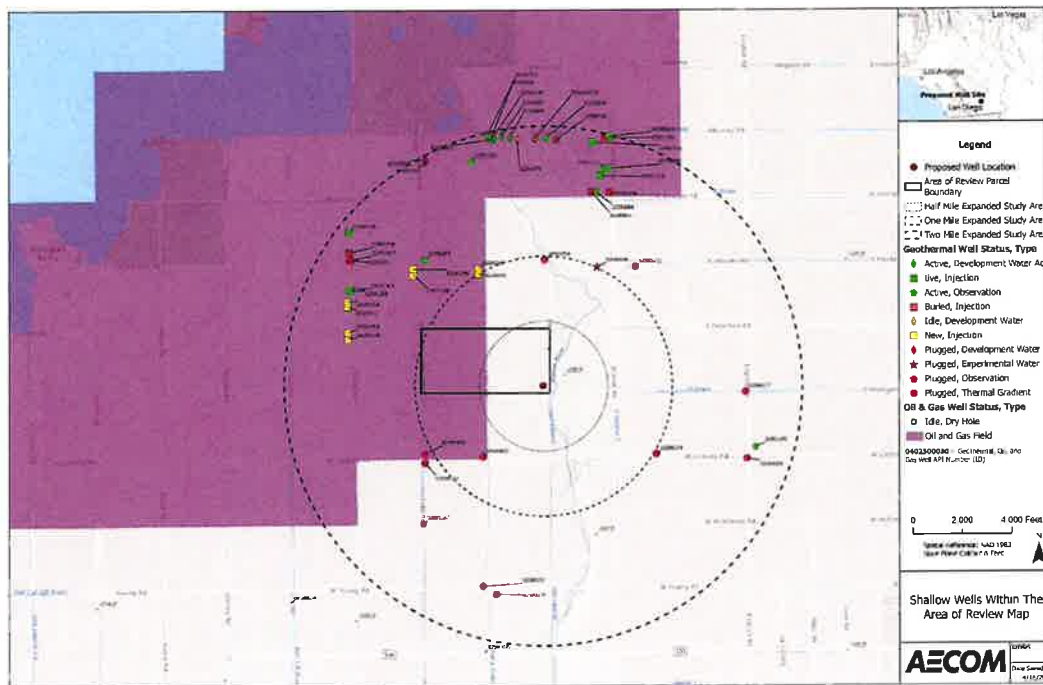
In most areas of the Imperial Valley, the transmissivity of the entire thickness of saturated material is of little significance in the development of irrigation or municipal water supplies. In addition, the hydraulic connection between the sedimentary deposits at great depth and those in the upper part of the reservoir is so poor that the two parts are virtually completely isolated. The majority of municipal and irrigation supply is provided by surface water from the Colorado River.

Figure 7. Shallow Wells Identified Near Project Area



AECOM, 2024

Figure 8. Shallow Wells Identified Near Project Area (8,000Ft , 4,000 Ft and 2,000 Ft BufferZone)



AECOM, 2024

## 7. Geothermal Activity

Evaluation of geothermal resources in the Imperial Valley have included heat flow, resistivity, gravity, magnetic and marine seismic surveys. Heat flow studies, using shallow drill hole temperature gradient measurements, have been conducted over much of the area south, southeast and east of the Salton Sea. Total heat flow is made up of the heat flow by conduction plus heat flow by convection plus heat flow by radiation. The first two are of prime importance in measurements for a geothermal area in Imperial Valley. Generally, heat flow is measured in calories per square centimeter per second, but field data are most often gathered using temperature gradients measured in degrees Fahrenheit per 100 feet of depth. Normal gradients are one degree F. per 100 feet, however, may vary widely based on the geologic setting and materials involved. Gradients measured on several of the areas in the Imperial Valley are 24° F/100 feet at Heber, 10.4° F/100 feet at East Mesa, 27° F/100 feet at the Dunes, 6.3° F/100 feet at Brawley and 19.8° F/100 feet at Salton Sea based primarily from a large number of test holes approximately 100 feet deep (Meidav and Rex, 1970). Comparison of this information with data from 17 holes 500 feet deep, drilled by Standard Oil Co., indicated that, in most cases, no significant difference exists between the shallow and deeper geothermal gradient test hole data. However, projected versus measured temperature gradients below 1,000 feet where differences in geothermal gradient will be significantly greater.

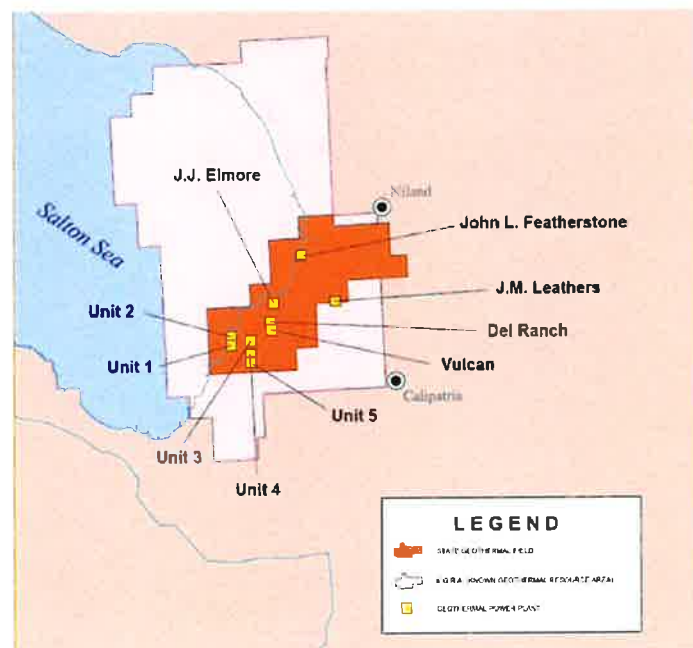
In the Imperial Valley areas of gravity highs based on gravity surveys are often associated with areas of high heat flow. This may be due to the presence of an intrusive mass near the surface and the fact that consolidation and metamorphism of the sediments takes place in the areas of high heat flow. Positive magnetic and gravity anomalies in the southern portion of the Salton Sea indicate the presence of a dense, magnetic, cooling intrusive mass and may represent the parent magma of the volcanic domes in this area (McNitt, 1963, p. 32.) Development of geothermal steam for power from this area began in 1927. During that year, the Pioneer Development Co. drilled three holes in Sec. 10, T.1S.,R.13E., SBM, about one-half mile east of Mullet Island. The deepest of the three holes was 1,473 feet. Steam was encountered in all three holes, but the pressures and volume were not feasible for the operation of a steam generating plant. However, it was these exploratory wells that led to the development of the carbon dioxide field in this area that produced for over 20 years.

The first well that penetrated the lower superheated zone was the No. 1 Sinclair well that was drilled by the Kent Imperial Oil Company in 1957 to a total depth of 4,700 feet. Temperatures of 562 °F were recorded and the total mass flow (steam and water) was 26,000 lbs. per hour. Two subsequent wells, the Sportsman No. 1, completed to a total depth 4,729 feet, and the I.I.D. No. 1, completed to a total depth of 5,232 feet, was drilled solely to explore and develop the steam potentialities of the area. The Sportsman No. 1 hole, which had an inside diameter of five inches, flowed 65,000 lbs. of steam and 285,000 lbs. of water per hour at 390°F at wellhead pressure of 200 psig in a sustained test. The highest recorded in-hole temperature was 643°F., the highest ever recorded in a hole drilled for steam at the above noted depths. The I.I.D. No. 1 hole had an inside diameter of seven inches, flowed 125,000 lbs. of steam and 500,500 lbs. of brine per hour at 405°F and a recorded wellhead pressure of 200 psig during a 90-day test in 1962. The maximum depth reached by a well in this group was 8,100 feet with an average depth of about 5,000 feet. Koenig (1970) has suggested that data indicate that a brine pool exists beneath this area with a maximum dimension of 12 to 20 square miles and that the volume of brine contained within the reservoir is in excess of one cubic mile. Reservoir temperatures reached a temperature of 680°F at a depth of about 7,000 feet.

The high salinity of the brines from the wells is a severe problem in disposal related to geothermal steam production, but provides the potential for economic mineral extraction from the high mineral content. The brine contains about 335,000 ppm total dissolved solids. Because of the unique composition of the brine, the extraction of the dissolved salts and lithium carbonate may be economically feasible.

The Salton Sea Geothermal System, one of several water-dominated geothermal fields in the Salton Trough, located in a sediment filled rift valley that represents the landward extension of the Gulf of California into North America. It is the largest and most saline high-temperature system in the trough. The geothermal fields in the Salton Trough and in Salton Sea Geothermal Field.

Figure 9: Geothermal Production Wells Near Project Site



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## 8. Geothermal Lithium Resources

The Salton Sea Geothermal Resource Area (SSGRA) in Imperial County, California has been identified as a potential domestic U.S. resource of lithium due to the brine-hosted lithium in the deep subsurface geothermal reservoir. The geologic history of the region suggests that lithium in the subsurface brines could have come from multiple sources, including water and sediments from the Colorado River, which have been periodically deposited over the last several million years; rocks from the surrounding mountain ranges and lithium-bearing volcanic rocks and igneous intrusions from past geologic events. In addition, several natural processes may have concentrated lithium in the brine over time, including evaporative concentration of lithium-bearing water that flowed into the basin and leaching of lithium from the sediments and rocks by the circulating geothermal brines.

Geothermal brine production at the Salton Sea Geothermal Area, related to existing geothermal power plants, has averaged just over 120 million metric tons per year since 2004. Based on an approximate lithium brine concentration of 198 parts per million (ppm), the amount of dissolved lithium contained in these produced brines is estimated to be 127,000 metric tons of lithium carbonate equivalent (LCE) per year. The total dissolved lithium content in the well characterized portion of the Salton Sea Geothermal Reservoir is estimated at 4.1 million metric tons of LCE, and the estimated total resource increases to 18 million metric tons of LCE, if assumptions for porosity and total reservoir size are increased to reflect the probable resource extent. Currently within the SSGRA are two density-stratified and distinct fluids: (1) a cooler, lower salinity (<10% by weight of total dissolved solids [TDS], density ( $\rho$ ) = 0.85 g/cm<sup>3</sup>) fluid on top; and (2) an underlying hot, hypersaline (>20% TDS,  $\rho$  = 1.0 g/cm<sup>3</sup>) brine (Williams and McKibben, 1989; Williams, 1997). The interface between the lower salinity fluid and the hypersaline brine approximately follows the depth of the 250°C (480°F) isotherm in the geothermal field (Williams and McKibben, 1989). This relationship between the brine boundary layer and the 250°C (480°F) isotherm connects the existence of this hypersaline, geothermal (and Li-bearing) brine to the heat source in this region (Williams and McKibben, 1989). Previous studies of SSGRA hypersaline brines have found that these brines contain an average lithium concentration of 200 ppm based on 13 samples (Skinner et al., 1967; Helgeson, 1968; Maimoni, 1982; Williams and McKibben, 1989; McKibben and Hardie, 1997).



## 9. Project Specifics: Regarding Geothermal Test Well

### 9.1. Determining Number of Wells & Well Pad Location

A pad location is proposed and intended to provide GLEC flexibility in its exploration program. The minimum number of pads will be constructed for the exploratory project. If the resource can be proven from a single pad, then only one pad will be constructed, but if more are required by GLEC to prove the resources viability, up to two well pads and two wells could be constructed per GLEC's proposed exploratory plan. A summary of the surface areas, anticipated fill material, days to construct and construction water requirements for all the proposed well pads, move on areas and access tracks is tabulated in Error! Reference source not found.. The proposed well site is believed to be located such that optimum quality resource can be obtained with a minimum amount of surface disturbance.

Table 1. Well Pads, Move-On Areas

	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	Fill Material (Yd <sup>3</sup> )	Days to Construct	Water Truck Loads (2,000 gal Trucks)	Water Volume (gals)
Pad 1	200	350	70,000	5,485	14	448	896,000
Pad 2	200	350	70,000	5,485	14	448	896,000
Move On 1	300	300	90,000	1,754	7	224	448,000
<b>Totals</b>			<b>1,150,000</b>	<b>74,222</b>	<b>108</b>	<b>3,456</b>	<b>6,912,000</b>

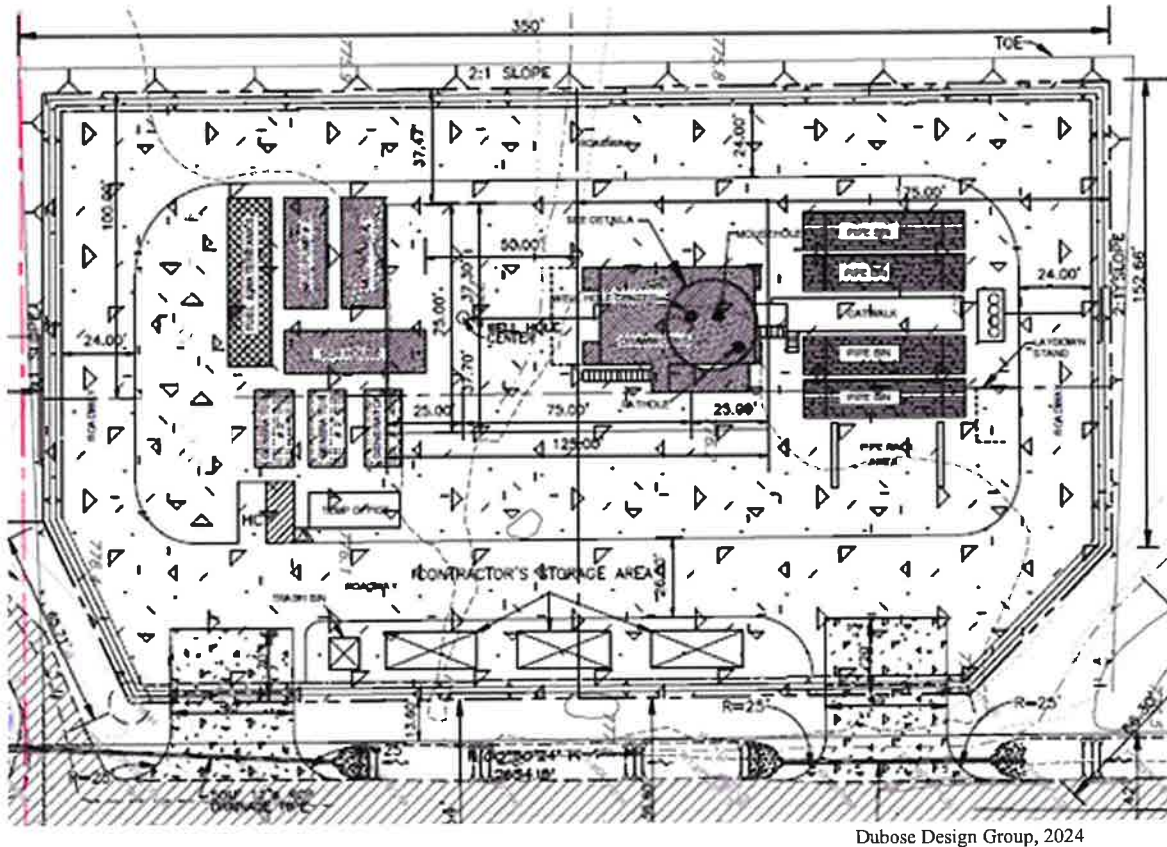
Pad 2 only if needed\*

### 9.2. Drilling & Staging

Geothermal well drilling would be conducted from well pads approximately 350'x200' (70,000 SQFT) in dimension. Drilling will be conducted without sumps and use tanks to manage drilling fluids and solids management on site. A general layout of the proposed rig is shown in (Update Figure, 10)

*(Continues on Next Page)*

**Figure 10: Drill Rig Configuration Example**



Standard geothermal well drilling equipment and well drilling operations will be implemented for the project. The wells will be drilled using a large rotary drilling rig with diesel engines permitted under the California Air Resources Board (CARB) Portable Engine Registration Program (PERP). The wells will be drilled with water-based mud to circulate the drill cuttings to the surface. During drilling, the top of the drill rig derrick would be as much as 150-175 feet above the ground surface, and the rig floor maybe 20-30 feet above ground surface. The typical drill rig and associated support equipment (rig floor and stands; draw works; derrick; drill pipe; trailers; mud, fuel and water tanks; diesel generators; air compressors; etc.) would be brought to the prepared site via road trucks and trailers. The well bore would be drilled using non-hazardous, temperature stable gel-based drilling fluid to circulate the cuttings to the surface where they are removed from the drilling mud and recirculated back down the borehole. Cuttings would be captured in the mud pit. Additives would be added to the drilling fluid as needed to prevent corrosion, increase mud weight, and prevent mud loss. The well design is a 12-inch open-hole completion to 6000 feet with casing set at 4,000 feet.

Each geothermal well would be drilled and cased to the design depth or the depth selected by the project geologist based on field data collected during the testing program. The final determination of well depth and well completion would be based on geological and reservoir information obtained at various depths as the exploratory well(s) are drilled and tested.

CDOGGR regulates geothermal well drilling operations on private lands in California. CDOGGR 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. 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.

### 9.3. Exploratory Well Construction and Testing Plan

The proposed exploratory well drill/testing and construction program will proceed in a phased approach to gain sufficient information on the lithologic and water quality characteristics of the drilled open-hole section from depth of 500 to 6,000 feet.

1. The recommended drilling/testing and well construction sequence and proposed sequence of work:
2. Drill/auger a 36-inch borehole, install 100 feet of 30-inch, 157 lb./ft steel casing and cement annulus from the base of the 30-inch casing to the surface.
3. Install well cellar
4. Drill a nominal 30-inch borehole from 100 to 500 feet, circulate, clean.
5. Install 500 feet of 24-inch 125.5 lb./ft, X-60 steel casing.
6. Cement the annulus of the 24-inch casing from its base to surface.
7. Install and test pressure control wellhead equipment to be witnessed by the State
8. Drill-out cement plug with appropriate diameter bit and borehole assembly (BHA)
9. Drill a nominal 10-inch borehole from 500 to 1,500 feet, circulate drilling fluid. Obtain 4-inch full diameter cores at approximately 200-foot intervals based on information from the drill cutting returns.
10. Run Platform Express Density-Neutron, SP-GR-Caliper, GR Spectroscopy and Array Induction Logs. Based on the results of the geophysical logs, run the sidewall coring tool and modular dynamic tester (MDT) to obtain 2-inch rock plugs and water samples from specified depths, if downhole conditions are favorable.
11. Submit rock plug for geotechnical and mineralogical analysis and water samples for laboratory analysis for major cations and metal analyses.
12. Conduct flow test(s) on 500 to 1,500 foot intervals and obtain composite water samples for detailed laboratory analysis.
13. Ream nominal 10-inch borehole to nominal 24 inches from 500 to 1,500 feet and run inclination survey every 60 feet.
14. Install 1,500 feet of 18 5/8-inch 87.5 lb./ft steel casing and cement annulus to surface.
15. Install and test well pressure control wellhead and witnessed by the State.
16. Drill-out cement plug with appropriate diameter bit and borehole assembly (BHA).

17. Drill a nominal 10-inch borehole from 1,500 to 2,700 feet, circulate drilling fluid upon completion. Monitor well drilling fluid temperature and CO<sub>2</sub> – H<sub>2</sub>S content. Obtain 4-inch full diameter cores at approximately 200 foot intervals based on information from drill cutting returns
18. Run Platform Express Density-Neutron, SP-GR-Caliper, GR Spectroscopy and Array Induction, acoustic televiewer logs. Based on the results of the geophysical logs, run the sidewall coring tool and modular dynamic tester (MDT) to obtain rock/water samples from specified depths, if downhole conditions allow based drilling data and mud log information.
19. Conduct flow test on 1,500 to 2,700 foot interval and obtain composite and discrete (down hole water sampler) water samples for detailed laboratory analysis
20. Complete data review to determine if objectives have been met,

**Decision Point – If so, discontinue drilling/testing operations, if not proceed to Step 20**

21. Ream nominal 10-inch borehole to nominal 18 inches from 1,500 to 2,700 feet and run inclination survey
22. every 60 feet and conduct directional surveys upon completion.
23. Install 2,700 feet of 13 3/8-inch 72 lb./ft N80 HC steel casing and cement annulus to surface.
24. Install and pressure test well control wellhead equipment to be witnessed by the State.
25. Drill-out cement plug with appropriate diameter bit and borehole assembly (BHA).
26. Drill nominal 12-inch borehole from 2,700 to 6,000 feet. Upon completion circulated drilling fluids to clean borehole prior to geophysical logging operations.
27. Run Platform Express Density-Neutron, SP-GR-Caliper, GR Spectroscopy, Array Induction and Acoustic Televiewer Logs. Based on the results of the geophysical logs run the sidewall coring tool and modular dynamic tester (MDT) to obtain rock/water samples from specified depths, if downhole conditions allow based on drilling data and mud log information.
28. Review all data from 2,700 to 6,000 feet to determine the following:
  - a. If the objectives were met with the initial total depth of 6,000 feet.
  - b. If objectives have been met and borehole integrity will be maintained then remove drilling fluid and run production including temperature, pressure, fluid resistivity logs.
  - c. Conduct flow tests on 2,700 -6000 foot intervals. Obtain production (rate) and water sample for detailed laboratory analysis.
  - d. If borehole integrity cannot be maintained then install 10 3/4-inch perforated or slotted liner from 2,600 to 6,000 feet.

**Decision Point - decision will be needed at this point to install more expensive corrosion resistant alloy (i.e., 2507 Super Duplex) or suitable steel liner (slotted or perforated) based on long-term objectives – only exploratory in nature or to be used as a future extraction or injection well.**

- a. If the objective have not been met then determine if the nominal 12-inch borehole needs to be deepened to acquire additional geologic, water quality and production data.

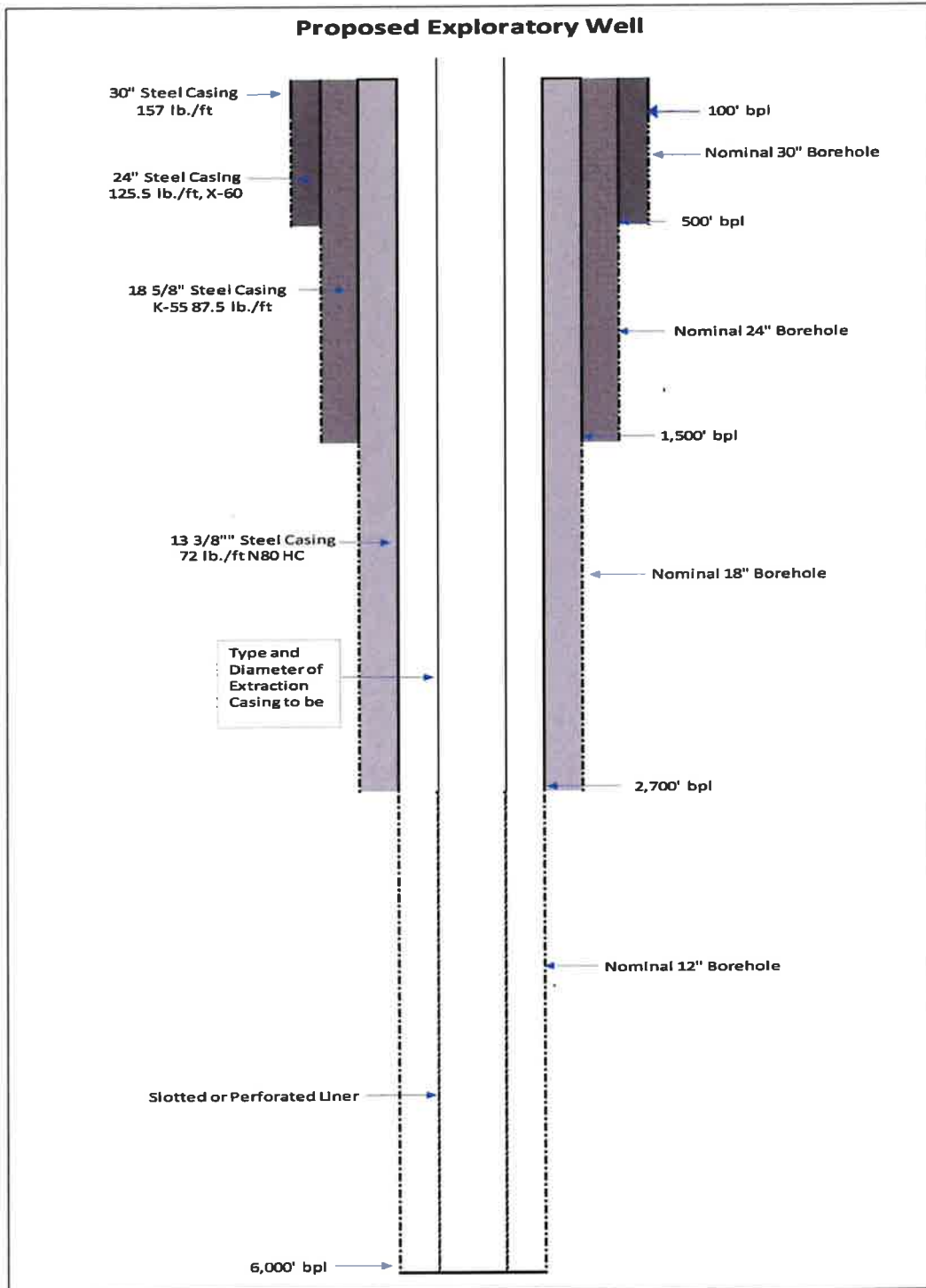
- b. If the nominal 12-inch borehole is to be deepened then determine if an additional casing string (e.g., 10 3/4 inch) needs to be installed below 2,700 feet to maintain safe drilling conditions to the proposed total depth.
- c. Once drilling and geologic/geophysical/water quality/production data indicate objectives have been met, decide the final completion method similar to Steps 26 a-b.

While the drill rig is still over the well. The residual drilling fluid and cuttings would be removed from the well bore and discharged into the onsite tanks. This cleanout flow test may be followed by one or more short-term flow tests, each lasting from a few hours and conducted while the drill rig is over the well. These tests typically consist of producing the geothermal well fluids into portable steel tanks brought onto the well site while monitoring geothermal fluid temperatures, pressures, flow rates, chemistry and other parameters. Steam from the geothermal fluid would be allowed to discharge to the atmosphere. Produced liquid from the short-term flow test would be stored on site in a tank and then pumped back into the well.

An injection test may 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

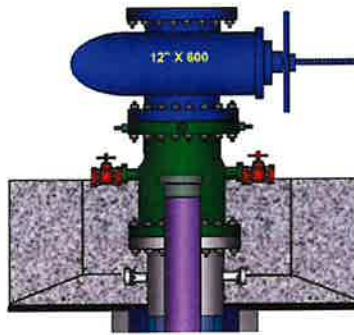
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Figure 10 Proposed Exploration Well



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Figure 11. Proposed Design of the Surface Completion for the Exploratory Well.



Following the short-term test, all equipment would be removed and the well shut in. Temperature profiles of the wellbore would be measured during the shut-in period with wireline logging tools and equipment. 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 30-60 days. Steam from the geothermal fluid would typically be allowed to discharge to the atmosphere. The remaining liquid would be injected back into either the well from which it was produced or into a second well via a temporary pipeline routed along the well site access tracks. Estimates on the well testing rates and quantities is shown in

Table and the expected brine chemistry based on offset well public data is shown in Table 2.

Following completion of the short-term geothermal well testing, all the drilling and testing equipment would be removed from the site. The surface facilities remaining on the site would typically consist of a small pilot operation (40' container and associated small vessels) 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.

Table 3. Estimates on Well Testing

	Flow Rate (lbs/hr.)	H <sub>2</sub> S Rate (lb/hr.) 0.002%	CO <sub>2</sub> Rate (lb/hr.) 0.25%	Test Duration (hrs.)	Total H <sub>2</sub> S (lbs)	Total CO <sub>2</sub> (lbs)
Well 1	300,000	6	750	4.00	24	3,000.00
Well 2	300,000	6	750	4.00	24	3,000.00
Totals for Wells 1-2					48	6,000.00

Table 2. Estimated Brine Chemistry

Analyte	Average (mg/kg)	Standard Deviation (mg/kg)	Relative Standard Deviation (%)	N
Cl	142,015	18,853	13	13
Na	49,249	5,578	11	13
Ca	25,684	3,050	12	13
K	14,467	3,370	23	13
Fe	1,347	653	48	13
Mn	1,201	393	33	13
Zn	463	169	36	12
Sr	434	67	15	12
SiO2	342	133	39	7
NH4	311	111	36	8
B	298	69	23	11
Ba	205	57	28	11
Li	202	39	20	13
Rb	110	52	47	4
Mg	109	192	176	13
Br	91.4	28.0	31	9
Pb	84	19	23	12
SO4	58.6	37.3	64	9
Cs	19.8	2.9	15	4
I	17.0	3.6	21	3
F	14.7	0.6	4	3
As	9.0	3.6	40	3
Cu	4.1	2.3	57	10
Al	2.4	1.2	51	5
Cd	1.9	0.5	27	7
Ag	1.6	0.7	43	3
TDS (%)	24.3%	2.8%	12	13

(Williams & McKibben, 1989, McKibben & Hardie, 1997, Duyvesteyn, 1992, Featherstone & Powell, 1981, Maimoni, 1982, Blake, 1974, Skinner et al., 1967, Palmer, 1975, Zugin et al., 1987.)

Table 4: Flush Corrected Brine Analysis from Geothermal Wells in SSGRA from Williams and McKibben, 1989.



	HYPER-SALINE					LOW T.D.S. (h)			
	SSSDP <sup>(l)</sup> Well, State 2-14			Commercial Well #11b	Commercial Well #10	Woolsey <sup>(f)</sup> Well #1	Commercial Well #B1	I.I.D. <sup>(g)</sup> Well #3	Commercial Well #113
	12-1985	3-1986 <sup>(d)</sup>	6-1988 <sup>(e)</sup>						
Temp (°C)	305	330	320	300	295	240	230	190	200
pH	5.4	5.1	5.3	5.2	5.3	?	6.9	?	7.6
Depth (m)	1,850 - 1,890	2,500 - 3,220	1,830 - 2,200	660-1,070	700-1,070	570-720	710-940	?-520	410-990
Na	53,000 ppm	54,800	53,700	46,200	41,400	25,000	15,000	10,600	4,800
Ca	27,400	28,500	26,300	22,800	20,900	11,000	2,520	1,130	117
K	16,700	17,700	17,100	12,500	11,800	5,000	2,480	1,250	297
Fe	1,560	1,710	1,620	582	969	65	86	0.7	25
Mn	1,450	1,500	1,470	801	855	NA	60	6.4	ND
SiO <sub>2</sub> <sup>(c)</sup>	>461	>588	>840	>336	>404	NA	>255	>120	102
Zn	518	507	512	321	323	NA	11	NA	ND
Str	411	421	410	376	345	513	112	85	10
B	257	271	380	204	197	NA	92	100	32
Ba	203	353 <sup>(b)</sup>	218	183	156	NA	45	3	0.7
Li	194	209	215	157	152	93	55	40	9
Mg	33	49	43	19	33	NA	54	74	24
Pb	100	102	107	69	67	NA	2.6	NA	ND
Cu	5.9	6.8	5.8	NA	2	NA	ND	NA	ND
Cd	2.2	2.3	2.2	1.0	1.4	NA	ND	NA	ND
Cs	NA	NA	23	NA	NA	NA	NA	NA	NA
Ni <sup>++</sup>	333	330	356	339	341	NA	103	321	NA
Cl <sup>-</sup>	151,000	157,500	152,000	128,000	116,000	85,000	31,000	19,700	6,900
Br <sup>-</sup>	99	111	111	95	78	NA	24	15	10
CO <sub>2</sub> (m)	1,600	1,580	1,950	1,100	5,500	NA	10,000	NA	NA
H <sub>2</sub> S	15	10	NA	15	20	NA	NA	NA	NA
SO <sub>4</sub> <sup>=</sup>	65	53	~123	~100	53	NA	53	621	440
TDS	~25.62	~26.5	~25.6	~21.4	~20.0	~12.7	~6.2	~3.5	~1.1

- (a) Volumetric measurement of total non-condensable gas. (e) Short clean-out flow probably some contamination  
 (b) Probable contamination from drilling fluid. (f) Needham et al. 1980  
 (c) Silica values low due to precipitation prior to and during sampling. (g) Huffer and White, 1969  
 (d) Concentrations corrected for ~5% dilution by drilling fluid. (h) Total dissolved solids  
 (i) Salton Sea Scientific Drilling Project

## 9.4. Suspension

This is an exploration project, and the results of the exploration and evaluation/appraisal will determine the required life of the wells. If the exploration is unsuccessful and the project is deemed to be non-viable then the exploration wells will be abandoned in conformance with CDOGGR requirements.

If the exploration and appraisal results are positive, the projected life of the project is a nominal +30 years. During the life of the project, the exploration wells are proposed to be operated and maintained as extraction wells under a separate Conditional Use Permit permitted through the State of California. An application to re-permit the wells will be submitted. At the end of the useful life of the project, equipment and facilities would be properly abandoned. The geothermal wells would be abandoned in conformance with the well abandonment requirements of the CDOGGR. 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 wellhead (and any other equipment) would be removed, the casing cut off at least six feet below ground surface, and the well site reclaimed.

## 9.5. Traffic

The typical drill rig and associated support equipment (rig floor and stands; draw works; derrick; drill pipe; trailers; mud, fuel and water tanks; diesel generators; air compressors; etc.) would be brought to the prepared site on approximately 40 large tractor-trailer trucks.

Table 5. Transportation/Circulation Estimates

Estimated number of delivery/transport vehicles per day (move in, operating, move out)?	
Cementing Unit	2 x 660 cubic foot cement bulk trucks on site per day for 4 days per well
Directional Drilling Unit	1 x 40 foot trailer for mobilization per well 1 x 40 foot trailer for demobilization per well
Drilling Rig	3 for mobilization per well 3 loads/week for operating 3 for demobilization per well
Solids Control Equipment	1 trailer for mobilization per well 1 trailer for demobilization per well
Civil Construction	60 truckloads per day during pad and track construction. Estimate 21 days to construct each well pad and 10 days to construct access track to project site
Crane and Truck Services	1 x crane on mobilization per well 1 x crane on demobilization per well
Number of light vehicles traveling to and from the site daily for personnel transport?	
Cementing Unit	2 x light duty vehicles on site per day
Directional Drilling Unit	2 x vehicles will be on location everyday switching out between 12-hour shifts.
Drilling Rig	1 for pusher, 2 for day crew and 2 for night crew unless you have more
Solids Control Equipment	2 per day. 1 for day shift and 1 for night shift.
Civil Construction	6 per day
Crane and Truck Services	1 on days and 1 on nights
Typical length of Trailers	
Cementing Unit	57 ft, 11 in.
Directional Drilling Unit	40ft
Drilling Rig	80ft
Solids Control Equipment	40ft
Civil Construction	40ft (5-axle truck)
Crane and Truck Services	40ft
Number of water trucks used daily?	
Cementing Unit	2 x 110-bbbls water trucks per day
Directional Drilling Unit	None required
Drilling Rig	5 x 110-bbbls water trucks per day on first day per well 3 x 110-bbbls water trucks per day on subsequent days per well
Solids Control Equipment	None required
Civil Construction	2 x 2000gal waters trucks hauling 32 loads per day
Crane and Truck Services	None required

Light vehicles would then travel to and from the site daily carrying the required personnel for the operations. Access tracks, drill rig and associated support equipment will be situated on compacted soil, which are adequate to support the required loads.

The applicant will submit a haul route circulation plan and will adhere to all requirements needed to meet Imperial County Public Works and Imperial Irrigation District’s standards.

## 9.6. Personnel

There will be various work parties involved with the exploration well project. The work parties would include the following contractors: Civil Works, Drilling, Wireline, Coil Tubing, Cementing, Nitrogen, Land Transport and Geologic and Environmental Consultation/Monitoring. Interaction of work parties would be managed by Dubois Design Group and ensure compliance with all county and state regulations.

Work Party	Qty
<b>Drilling Contractor</b>	8
<b>Cementing Contractor</b>	2
<b>Wireline Contractor</b>	2
<b>Directional Drilling Contractor</b>	4
<b>Coil Tubing Contractor</b>	4
<b>Nitrogen Contractor</b>	2
<b>Civils Contractors</b>	5
<b>Geological-Environmental</b>	2
<b>Transport</b>	2

An Emergency Response Plan, will be submitted to the Imperial County Planning & Development Services department, to plan for emergency response should an emergency occur on site.

## 9.7. Schedule

The proposed schedule of works is desired to commence in March 2025 (pending permitting and approvals) with civil works to gain access to the pad locations. Depending on the drilling and testing results from the first exploratory well, a decision will be made to proceed with additional civil works and drilling operations for the second exploratory well. Each well is anticipated to take approximately 30-40 days to construct, so a maximum anticipated operations period would be 80 days if both exploratory wells are completed. In addition to which the pilot testing/minerals concentration verification will take an additional 3-4 months.

The above description of activities was prepared by GLEC for exploration and appraisal of the site’s geothermal and mineral resources. Any questions or comments can be directed to Global Lithium Energy Corp., c/o Tom Dubose – Dubose Design Group or Michael Bennett – AECOM.

# APPENDIX

The following supplementary documents, research material have been provided by the aforementioned engineering partners. A copy of each report is attached separately to this project description and listed below:

- AECOM Geothermal Resource Exploration Plan
- LandMark Geologic & Geotechnical Hazard Report
-

# GLEC Geothermal Exploratory Well 1

Geologic and Geothermal Data Summary

Project number: 60728769

May 8, 2024

### Quality information

<b>Prepared by</b>	<b>Checked by</b>	<b>Verified by</b>	<b>Approved by</b>
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Michael Bennett, P.G. Hydrogeologist VI			

### Revision History

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# 1. Purpose

A geologic, hydrogeologic and geothermal lithium content analysis and associated Area of Review evaluation of existing information available in the public domain within a 10 mile radius of the proposed well site was conducted to better understand existing conditions and limitations related to the proposed geothermal exploration well project located on Kalin Road approximately 1 mile south of Sinclair Road northwest of Calipatria, California.

# 2. Site Description

The project site (APN 020-120-025) consists of approximately 320 acres of agricultural use land divided into four 80-acre fields. The project site is bounded on the east by Dewey Road and the west by Hatfield Road, both of which are unpaved county roads. Kalin Road, a paved county road, crosses north-south through the middle of the project site (See Figure 1). Dirt field roads and concrete lined irrigation ditches form the northern and southern property boundaries. Agricultural fields surround the project site. The Alamo River is located east of the project site beyond which is the Brandt Cattle feed lot. The project site is flat lying ranging in elevation from 210 to 215 feet below mean sea level (MSL). A surface disturbance identified as the Katlin Fault Trace transects the northwest section of the project site (Landmark, 2024).

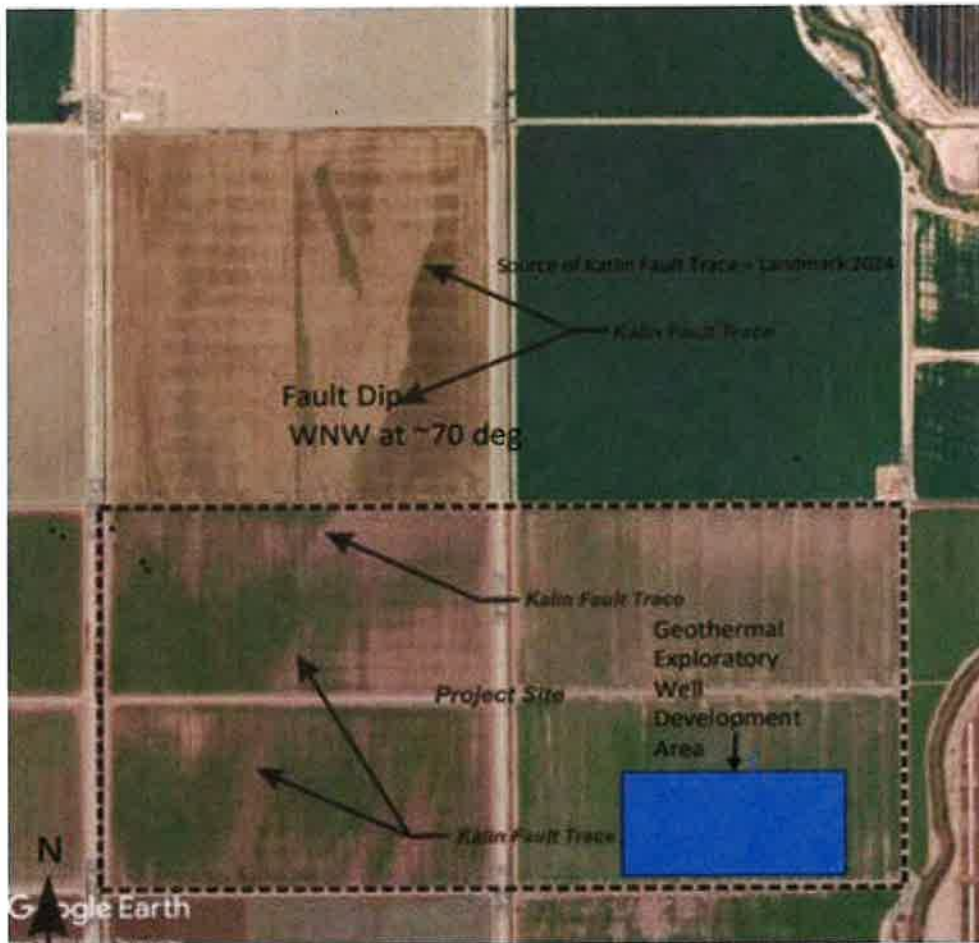


Figure 1: Project Site Map

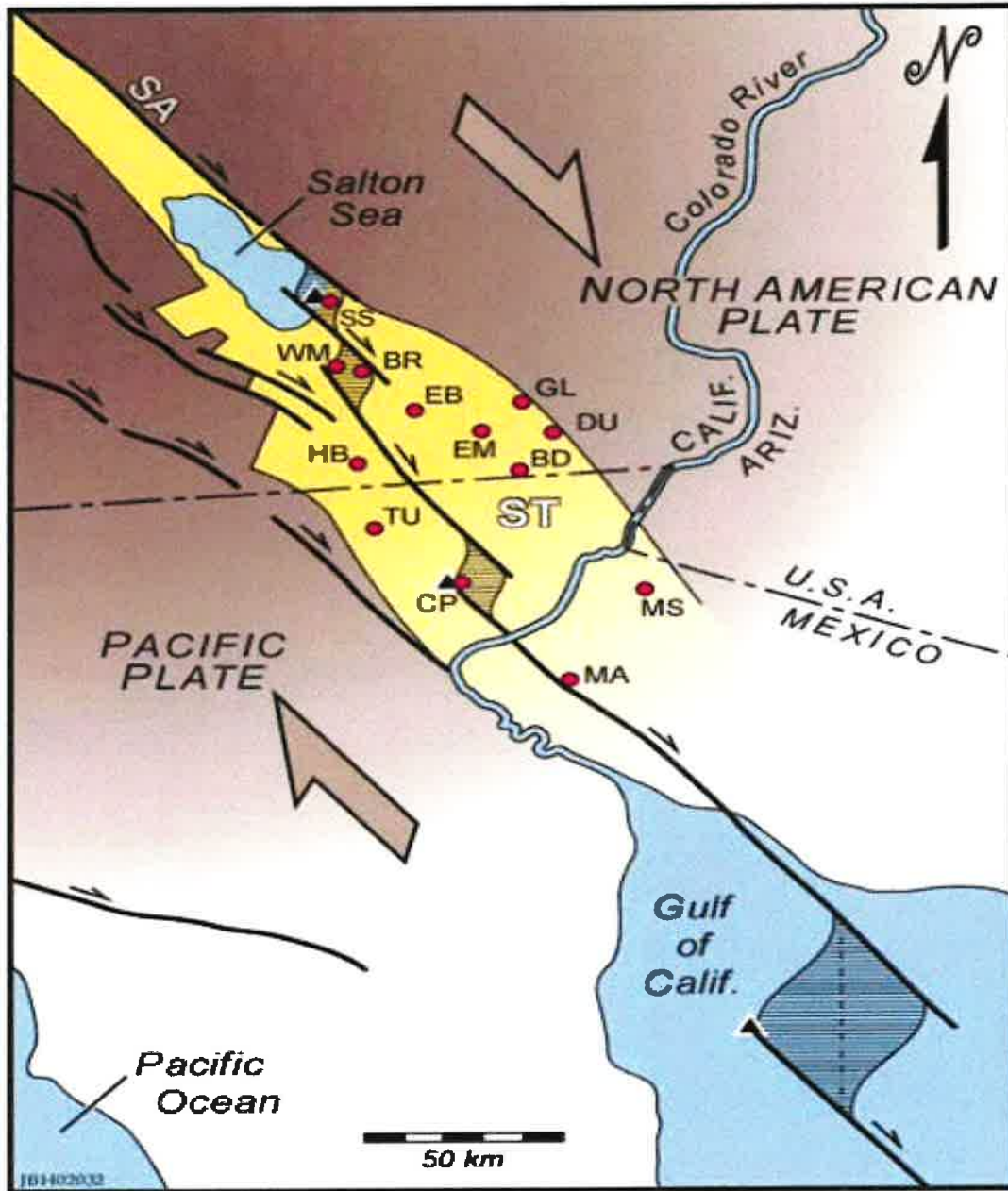
### 3. Regional Geologic Setting

The Imperial Valley occupies the southern, wider part of the Salton Trough. On the northwest, the valley is bordered by the Salton Sea; and on the southeast, it is contiguous with the Mexicali Valley in Mexico and the part of the Colorado River delta that is above sea level. The Chocolate Mountains are on the northeast, and the Peninsular Range of Baja California and southern California is on the southwest. The land surface slopes northwestward from about sea level at the international boundary to the Salton Sea, 50 miles distant. Several shorelines of prehistoric Lake Cahuilla, at 42 to 50 feet above mean sea level, are well-preserved features in both the eastern and the western parts of the valley.

Most of central Imperial Valley is a monotonous plain dissected by two major drainages, the Alamo and New Rivers that have cut trenches as much as 40 feet deep in the soft silty lacustrine deposits. Much of the incising into the surface sediment took place during 1905-7, when almost the entire Colorado River flowed uncontrolled in these channels and established the present-day Salton Sea.

The Salton Sea Geothermal Field (SSGF) has been explored since 1927, and in commercial production since 1982. The SSGF is a robust geothermal field, primarily because of its structural setting. The SSGF is located in the Salton Trough, a tectonically active sedimentary pull-apart basin that occurs at the southern tip of the San Andreas fault system as it steps over into the continental rift zone between the Pacific and North American Plates. The Salton Trough, south into the Gulf of California, is dominated by a series of smaller scale pull-apart basins of different sizes that connect right-stepping, primarily right-lateral, strike-slip faults that strike generally northwest (Figure 2). This pattern of faulting forms in trans-tensional shear zones where there are structures related to both strike-slip (N-S) and east-west extensional movement.

Tectonically, the formation of the SSGF is influenced not only by the step-over from the San Andreas fault (SAF) to the Imperial fault (IF), but also by the San Jacinto fault zone (SJFZ) which runs up the west side of the Salton Sea, which joins the SAF to the north (see Figure 2). This impedes the northern movement of the Pacific Plate between the SAF and SJFZ zone, transferring most of the northern motion west of the SJFZ. This imparts rotation of a larger land area and increases the complexity, forming two spreading centers within this area (Brothers et al., 2009). This region forms a tectonic transition from the divergent plate boundary of the East Pacific Rise, in the south, to the transform plate boundary of the San Andreas Fault in the north. This tectonic regime is one of the few places where an oceanic spreading center is acting on a continent today (Elders et al. 1972).



- Extent of 'normal' crystalline continental crust according to Fuis and Hothorn (1984)
- 4-5 m.y.-old incipient continental rift zone
- Pull-apart zone at extensional overstep
- Geothermal fields
- Quaternary volcanoes
- high-angle faults (arrows show displacement)
- Quaternary basins and the rifters

**Figure 2.** Location and tectonic map of the Salton Trough (ST) and its high-temperature geothermal systems relative to the southeastern terminus of the San Andreas fault zone (SA) and the tip of the Gulf of California. (Source: Kasperleit, et al., 2016)

## 4. Geologic Units Underlying Imperial Valley

### 4.1 Mecca Formation – Mesozoic

Metasedimentary and metavolcanic rocks tentatively correlated with the Mecca Formation has been identified at several localities in Imperial County. The rocks of this unit in Imperial County are composed of metasandstone, meta-conglomerate, phyllite, meta-andesite, other metavolcanic rocks, and minor limestone; phyllite is the most common of these. Areas underlain by this formation are characteristically dark gray or gray-green and tend to have rounded, subdued topography. A probable late Paleozoic or Triassic age was assigned to the McCoy Formation by Miller (1944, p. 52).

### 4.2 Igneous Rocks – Cretaceous

Igneous rocks related to the southern California batholith of probable Cretaceous age are widespread in Imperial County as they are elsewhere in the inland provinces of California.

The separate mountainous areas of the western Imperial Valley such as Signal Mountain, Superstition Mountain, Fish Creek, Vallecito, and Santa Rosa Mountains are underlain by bodies of diorite, quartz diorite, and gabbro. Plutonic rocks in the Chocolate Mountains are predominantly granite and quartz monzonite. Quartz diorite from Superstition Mountain has been determined by lead alpha dating methods to be 155 million years  $\pm$  10 percent, or Jurassic to Late Triassic in age (Bushee et al., 1963, p. 805).

### 4.3 Sedimentary Units - Cenozoic

The Tertiary and Quaternary sedimentary and volcanic rocks occur in Imperial County. In the Imperial Valley, the Cenozoic rock sequences comprises more than 20,000 feet of nonmarine, marine and volcanic rocks representing accumulation since the Miocene that occurred in a very broad basin that generally corresponds to the present drainage basin of Imperial-Coachella Valley (Rex, 1970, Dibblee, 1954).

#### 4.3.1 Imperial Formation

The last major marine invasion of the Salton Trough is probably represented by the Imperial Formation. The Imperial Formation is **the only dominantly marine** formation known to occur in Imperial County. The Imperial Formation has been reported but not confirmed in numerous exploratory oil/gas and geothermal wells throughout Imperial Valley. The marine origin of the Imperial Formation is associated with influx of seawater and sediment from the ancestral Gulf of California.

It is composed predominantly of yellow and gray claystone with interbedded sandstone, and oyster-shell reefs. The lower 5 to 200 feet consists of sandstone and conglomerate. Thickness of the formation is as much as 3,700 feet on the north side and 2,700 feet on the south side of Carrizo Creek in the Fish Creek Mountains and 2,800 feet thick in drill holes near Obsidian Butte at the east side of Imperial Valley (Dibblee, 1954).

The age of the Imperial Formation has been determined to be late Miocene to middle Pleistocene. The Imperial Formation grades laterally and upward into the Palm Spring Formation (Christensen, 1957, Durham, 1954, Woodard, 1961).

### 4.3.2 Palm Springs Formation

The Palm Spring Formation conformably overlies the Imperial Formation, which grades upward into it. The Palm Springs Formation is composed of a thick sequence of interbedded light-gray non-marine arkosic sandstone and reddish clay. A brackish water delta facies of the Palm Spring Formation has been reported underlying the Borrego Formation in geothermal steam wells at the southeast end of the Salton Sea.

The Palm Spring Formation is 6,500 feet thick north of Carrizo Creek and 4,800 feet thick south of Carrizo Creek. It thins to the west where it grades into Canebrake Conglomerate. It has been dated and range from middle Pliocene to middle Pleistocene.

### 4.3.3 Canebrake Conglomerate

The Canebrake Conglomerate is the coarse marginal facies of both the Imperial and Palm Spring Formations. In Imperial County is composed of conglomerate containing mostly granitic and metamorphic debris. As Canebrake Conglomerate transcends the Imperial and Palm Spring Formations, it is mostly of Pliocene age, but the upper parts may be as young as Pleistocene.

### 4.3.4 Borrego Formation

The Borrego Formation is the lacustrine facies of the Palm Spring Formation. It crops out west of the south end of the Salton Sea and is exposed along the east shore of the Salton Sea and west of the San Andreas fault. It is composed of gray clay with interbedded sandstone and contains a lacustrine fauna including minute mollusks, ostracods, and foraminifera. The Borrego Formation is probably late Pliocene to middle Pleistocene on the basis of a vertebrate fauna (Dibblee, 1954).

### 4.3.5 Ocotillo Conglomerate

The Ocotillo Conglomerate consists of as much as 1,000 feet of gray granitic pebble conglomerate. This formation is Pleistocene or possibly late Pliocene age. The formation lies unconformably upon the Borrego and Palm Spring Formations and grades eastward into the Brawley Formation. In Imperial County it crops out just north of State Highway 78, at the eastern end of Superstition Mountain, and in the valley east of the Coyote Mountains.

### 4.3.6 Brawley Formation

The Brawley Formation represents the lacustrine facies of the Ocotillo Conglomerate. This formation, which consists of about 2,000 feet of light gray clays, sandstone, and pebble gravels, is very similar to the Borrego Formation but is younger. The Brawley Formation is dated as Pleistocene or late Pliocene (Dibblee, 1954). The Brawley Formation is generally included in the unit designated as Lake deposits.

### 4.3.7 Quaternary Lacustrine Beds

Most of the central parts of the Imperial Valley is more than 40 feet below sea level and are underlain by clay and silt deposits of ancient Lake Cahuilla. Shoreline deposits a few hundred feet wide encircle the Salton Basin. These units consist predominantly of unconsolidated sand and fine gravel. Basin ward these grade into silt and clay. In general.

Lake Cahuilla beds are believed to be less than 100 feet thick that originated by periodic overflow and diversion of the Colorado River into the Salton Basin.

## 4.4 Quaternary Volcanics

Volcanic domes composed of rhyolitic, pumice and obsidian intrude and overlie lake beds of the Brawley Formation at the southeastern shore of the Salton Sea. These domes are aligned in a north-northeast trending arc about 4 miles long, which approximates the present southeast shoreline of the Salton Sea. The alignment of the domes suggests they may lie along a fault or a zone of weaken.

These volcanic rocks are younger than the Brawley lake beds sediment and exposed to the wave-cutting action of at least one stage of ancient Lake Cahuilla. In addition, the high geothermal gradient and presence of carbon dioxide and steam as well as weak discharge of gases from joints and fractures in the domes, suggest that these intrusions are still cooling. The age of these domes, as determined from obsidian samples from Obsidian Butte was 16,000 years (Muffler and White, 1969).

The geologic units described above and their vertical and lateral interrelationships in the Imperial Valley is shown in Figure 3.

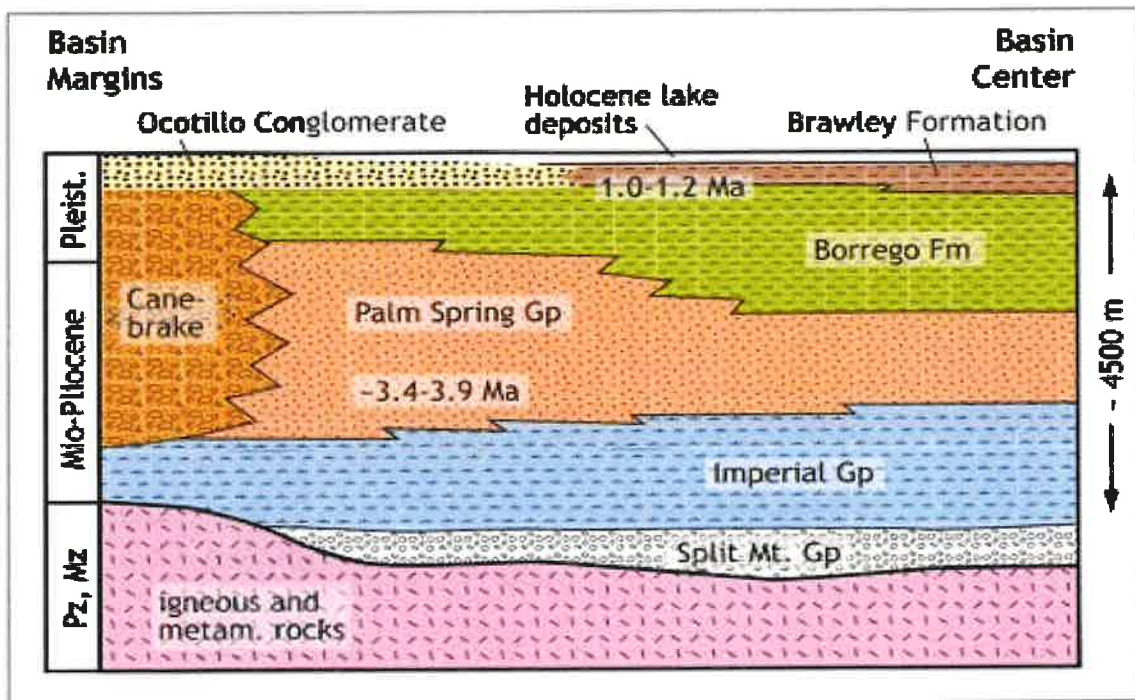


Figure 3. Geologic Cross-section of the Imperial Valley (Source: Dorsey 2016)

## 5. Geologic History

Since the onset of subsidence of the Salton Trough approximately 8.5 to 7 million years ago, an almost continuous sequence of deposition has filled the Trough with more than 20,000 feet of marine, deltaic, alluvial, and lacustrine sediments. The late Miocene was marked by moderate crustal thinning and basin subsidence, which resulted in a deep marine incursion into the Salton Trough resulting in the formation of the Imperial Group. The Imperial Group is a thick marine transgression of fossiliferous claystone and siltstone, deposited during this time (Dorsey, 2016).

During the Pliocene, subsidence of the Salton Trough increased and the former Colorado River began to deposit large volume of fluvial sediments into the northern portion of the Trough. The delta plain that developed was characterized by multiple stream channels and flood plains that quickly expanded southwards. This period corresponds with the thick arkosic sandstone and intermittent argillaceous intervals of the Palm Springs Formation (Dorsey, 2016).

Approximately 2 million years ago, right lateral motion on the San Andreas Fault moved the exit point of the Colorado River south of the current Salton Sea. The southward migration of the exit point led to the southward expansion of the perirenal Borrego Lake. This changing environment correlates with the thick claystone, siltstone, and fluvial sandstone lens of the Borrego Formation (Dorsey, 2016).

During the early Pleistocene to Holocene, the Colorado River would alternate its flow direction, resulting in repeated flooding and drying cycles of paleolake Cahuilla (McKibben, 1997). This period corresponds with the development of the Brawley Formation of lacustrine mudstone and evaporitic deposits that serves as the impermeable cap to geothermal fluids (Helgeson, 1968).

## 6. Groundwater Resources

The Imperial Valley groundwater basin has two major aquifers, separated at depth by a semi-permeable aquitard that averages 60 feet thick and reaches a maximum thickness of 280 feet. The aquifers consist mostly of alluvial deposits of late Tertiary and Quaternary age. Average thickness of the upper aquifer is 200 feet with a maximum thickness of 450 feet. The lower aquifer averages 380 feet thick with a maximum thickness of 1,500 feet. As much as 80 feet of fine-grained, low permeability prehistoric lake deposits have accumulated on the nearly-flat valley floor and cause locally confined aquifer conditions (Montgomery Watson 1995).

Recharge to the groundwater system is primarily from surface water irrigation return. Other recharge sources are deep percolation of rainfall and surface runoff, underflow into the basin, and seepage from unlined canals, which traverse the valley (CDPW 1954).

Groundwater within the basin generally flows toward the axis of the valley and then northwestward towards the Salton Sea. (Montgomery Watson 1995). Water levels vary widely within the basin due to differing hydraulic heads and the localized confining clay beds in the area (Brown 1923).

The groundwater resources are derived principally from heterogeneous sequence of nonmarine sediment deposits in the upper few thousand feet of the groundwater reservoir. At depths greater than a few thousand feet, the groundwater commonly is too saline for irrigation and most other uses, and the hydraulic connection between the water in the deeper deposits and the water in the upper part of the ground water reservoir is poor. Short-term pumping tests at several sites indicate that in both the eastern and the western parts of the Imperial Valley moderate to high yields can be obtained from wells that tap several hundred feet of the marginal alluvial deposits of the Ocotillo Conglomerate or deposits of the Colorado River. Transmissivities of several hundred thousand gallons per day per foot are characteristic of these deposits. Wells with specific capacities of 50 gallons per minute per foot of drawdown or more may be attainable in the more favorable areas. In contrast, the fine-grained deposits that are characteristic of the central part of Imperial Valley are likely to have transmissivities of only 1,000 to 10,000 gallons per day per foot to depths of approximately 500 feet. At greater depths, transmissivities are likely to be even less for a similar thickness of deposits due to greater overburden pressure and compaction of the sediments.

In most areas of the Imperial Valley, the transmissivity of the entire thickness of saturated material is of little significance in the development of irrigation or municipal water supplies. In addition, the hydraulic connection between the sedimentary deposits at great depth and those in the upper part of the reservoir is so poor that the two parts are virtually completely isolated. The majority of municipal and irrigation supply is provided by surface water from the Colorado River.



Groundwater from wells discharge only a small part of the groundwater in Imperial Valley. Much of the groundwater they tap is confined and therefore has some artesian (flowing) head. The principal area of flowing wells is in the eastern part of the valley, extending from about 2 miles north of the international boundary northward for about 30 miles in a 6- to 10-mile-wide belt between the Alamo River and the East Highline Canal. Most of these wells are 350 to 1,300 feet deep, are either slot perforated or not perforated, and are open at the bottom in fine- to medium-grained sand units.

Water quality varies extensively throughout the basin. Total dissolved solids (TDS) content ranges from 498 to 7,280 milligrams per liter (mg/L) in the basin (Loeltz and et.al., 1975). Imperial County Department of Health Services data from five public supply wells in the valley show an average TDS concentration of 712 mg/L and a range from 662 to 817 mg/L. TDS content of the groundwater commonly ranges from 700 to 5,000 mg/L. The better quality well water is used for domestic supply and stock purposes.

Reed (1975) conducted a study to determine the chemistry of thermal water in selected geothermal areas of California. This study documented the groundwater quality from artesian wells in the Brawley area ranging in depth from 265 to 1,300 feet. The data indicated the groundwater in this area is significantly influenced by the Colorado River water with surface water entering the Imperial Valley from the southeast and moves downgradient toward the center of the valley. In addition, runoff from the eastern mountains contribute to the groundwater composition in the northern part of the valley. In the Brawley area, the groundwater was identified as either sodium-chloride or sodium-bicarbonate types. Sulfate concentrations were high in some locations, which generally reflects the presence of gypsum or anhydrite in the sedimentary unit. Higher total dissolved solids concentrations in the groundwater generally correlated with higher temperatures and greater depths. The water quality in the upper sediments is controlled by the solubility of the contained minerals and there appears to be little interaction between the shallow artesian groundwater system and the deeper geothermal system near Brawley and other parts of the valley (Combs 1971).

The existence of groundwater below the shallow sedimentary deposits in the basin between the shallow deposits and deeper bedrock in the depth range of 2,000 to 20,000 feet is attributed, in part, to its original association with ancient overlying seawater. The deeper groundwaters are typically associated with high salinity and high-temperatures caused by magma intrusions underlying the Salton Trough. There are very few, if any, water supply wells that penetrate beneath 2,000 feet in the basin, due to their cost and because of the poor water quality at these depths have little value. The few wells that do penetrate into deeper formations typically support geothermal energy production.

In general, the lower permeability materials in or below the sedimentary deposits especially in the basin center impede groundwater flow between the shallow and deeper systems. This suggest that there are no significant modes for groundwater to recharge or discharge from great depths and that deep groundwater is very old and isolated from recent climatic and shallower hydrologic influences.

## 7. Geothermal Activity

Evaluation of geothermal resources in the Imperial Valley have included heat flow, resistivity, gravity, magnetic and marine seismic surveys. Heat flow studies, using shallow drill hole temperature gradient measurements, have been conducted over much of the area south, southeast and east of the Salton Sea.

Total heat flow is made up of the heat flow by conduction plus heat flow by convection plus heat flow by radiation. The first two are of prime importance in measurements for a geothermal area in Imperial Valley.

Generally, heat flow is measured in calories per square centimeter per second, but field data are most often gathered using temperature gradients measured in degrees Fahrenheit per 100 feet of depth. Normal gradients are one degree F. per 100 feet, however, may vary widely based on the geologic setting and materials involved.

Gradients measured on several of the areas in the Imperial Valley are 24° F/100 feet at Heber, 10.4° F/100 feet at East Mesa, 27° F/100 feet at the Dunes, 6.3° F/100 feet at Brawley and 19.8° F/100 feet at Salton Sea based

primarily from a large number of test holes approximately 100 feet deep (Meidav and Rex, 1970). Comparison of this information with data from 17 holes 500 feet deep, drilled by Standard Oil Co., indicated that, in most cases, no significant difference exists between the shallow and deeper geothermal gradient test hole data. However, projected versus measured temperature gradients below 1,000 feet were differences in geothermal gradient will be significantly greater.

In the Imperial Valley areas of gravity highs based on gravity surveys are often associated with areas of high heat flow. This may be due to the presence of an intrusive mass near the surface and the fact that consolidation and metamorphism of the sediments takes place in the areas of high heat flow.

Positive magnetic and gravity anomalies in the southern portion of the Salton Sea indicate the presence of a dense, magnetic, cooling intrusive mass and may represent the parent magma of the volcanic domes in this area (McNitt, 1963, p. 32.)

Development of geothermal steam for power from this area began in 1927. During that year, the Pioneer Development Co. drilled three holes in Sec. 10, T.1S.,R.13E., SBM, about one-half mile east of Mullet Island. The deepest of the three holes was 1,473 feet. Steam was encountered in all three holes, but the pressures and volume were not feasible for the operation of a steam generating plant. However, it was these exploratory wells, that led to the development of the carbon dioxide field in this area that produced for over 20 years.

The first well that penetrated the lower superheated zone was the No. 1 Sinclair well that was drilled by the Kent Imperial Oil Company in 1957 to a total depth of 4,700 feet. Temperatures of 562 °F were recorded and the total mass flow (steam and water) was 26,000 lbs. per hour. Two subsequent wells, the Sportsman No. 1, completed to a total depth 4,729 feet, and the I.I.D. No. 1, completed to a total depth 5,232 feet, were drilled solely to explore and develop the steam potentialities of the area. The Sportsman No. 1 hole, which had an inside diameter of five inches, flowed 65,000 lbs. of steam and 285,000 lbs. of water per hour at 390°F at wellhead pressure of 200 psig in a sustained test. The highest recorded in-hole temperature was 643°F., the highest ever recorded in a hole drilled for steam at the above noted depths. The I.I.D. No. 1 hole had an inside diameter of seven inches, flowed 125,000 lbs. of steam and 500,500 lbs. of brine per hour at 405°F and a recorded wellhead pressure of 200 psig during a 90-day test in 1962.

The maximum depth reached by a well in this group was 8,100 feet with an average depth of about 5,000 feet. Koenig (1970) has suggested that data indicate that a brine pool exists beneath this area with a maximum dimension of 12 to 20 square miles and that the volume of brine contained within the reservoir is in excess of one cubic mile. Reservoir temperatures reached a temperature of 680°F at a depth of about 7,000 feet.

The high salinity of the brines from the wells is a severe problem in disposal related to geothermal steam production, but provides the potential for economic mineral extraction from the high mineral content. The brine contains about 335,000 ppm total dissolved solids. Because of the unique composition of the brine, the extraction of the dissolved salts and lithium carbonate may be economically feasible.

The Salton Sea Geothermal System, one of several water-dominated geothermal field in the Salton Trough, located in a sediment filled rift valley that represents the landward extension of the Gulf of California into North America. It is the largest and most saline high-temperature system in the trough. The geothermal fields in the Salton Trough and in Salton Sea Geothermal Field are shown in **Figures 4** and **5**, respectively.

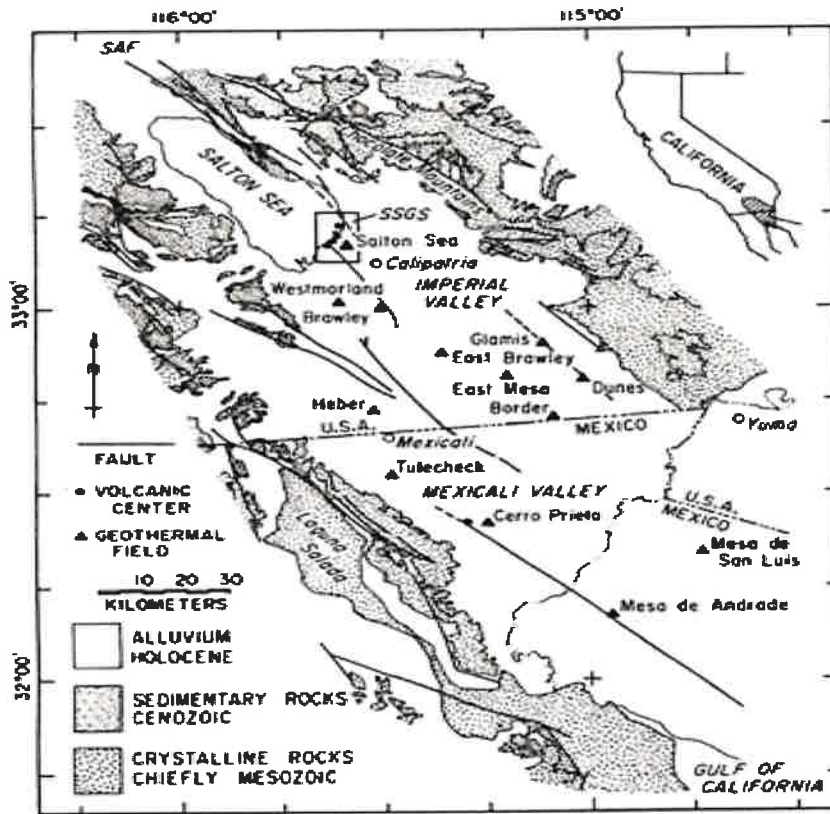


Figure 4. Geothermal Fields in the Salton Trough (Source: Elders and Sass, 1988)

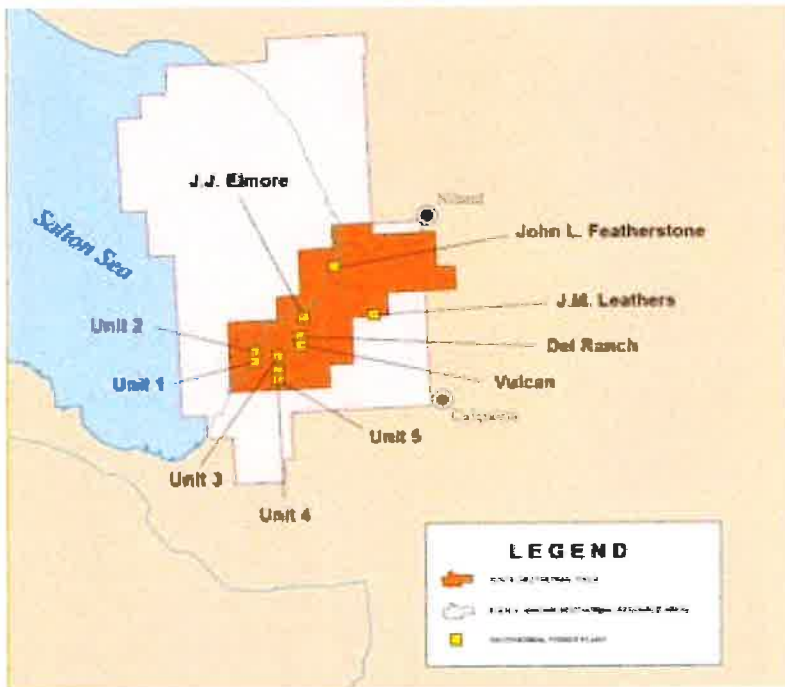


Figure 5: Geothermal Power Plants in the Salton Sea Geothermal Field (Source: Imperial County)

## 8. Geothermal Lithium Resources

The Salton Sea Geothermal Resource Area (SSGRA) in Imperial County, California has been identified as a potential domestic U.S. resource of lithium due to the brine-hosted lithium in the deep subsurface geothermal reservoir.

The geologic history of the region suggests that lithium in the subsurface brines could have come from multiple sources, including water and sediments from the Colorado River, which have been periodically deposited over the last several million years; rocks from the surrounding mountain ranges and lithium-bearing volcanic rocks and igneous intrusions from past geologic events. In addition, several natural processes may have concentrated lithium in the brine over time, including evaporative concentration of lithium-bearing water that flowed into the basin and leaching of lithium from the sediments and rocks by the circulating geothermal brines.

Geothermal brine production at the Salton Sea Geothermal Area, related to existing geothermal power plants, averaged just over 120 million metric tons per year since 2004. Based on an approximate lithium brine concentration of 198 parts per million (ppm), the amount of dissolved lithium contained in these produced brines is estimated to be 127,000 metric tons of lithium carbonate equivalent (LCE) per year. The total dissolved lithium content in the well-characterized portion of the Salton Sea Geothermal Reservoir is estimated at 4.1 million metric tons of LCE, and the estimated total resource increases to 18 million metric tons of LCE, if assumptions for porosity and total reservoir size are increased to reflect the probable resource extent.

Currently within the SSGRA are two density-stratified and distinct fluids: (1) a cooler, lower salinity (<10% by weight of total dissolved solids [TDS], density ( $\rho$ ) = 0.85 g/cm<sup>3</sup>) fluid on top; and (2) an underlying hot, hypersaline (>20% TDS,  $\rho$  = 1.0 g/cm<sup>3</sup>) brine (Williams and McKibben, 1989; Williams, 1997). The interface between the lower salinity fluid and the hypersaline brine approximately follows the depth of the 250°C (480°F) isotherm in the geothermal field (Williams and McKibben, 1989). This relationship between the brine boundary layer and the 250°C (480°F) isotherm connects the existence of this hypersaline, geothermal (and Li-bearing) brine to the heat source in this region (Williams and McKibben, 1989).

Previous studies of SSGRA hypersaline brines have found that these brines contain an average lithium concentration of 200 ppm based on 13 samples (Skinner et al., 1967; Helgeson, 1968; Maimoni, 1982; Williams and McKibben, 1989; McKibben and Hardie, 1997) as summarized in **Table 1**.

**Table 1: Chemical Composition of geothermal brines in the SSGRA.**

Analyte	Average (mg/kg)	Standard Deviation (mg/kg)	Relative Standard Deviation (%)	N
Cl	142,015	18,853	13	13
Na	49,249	5,578	11	13
Ca	25,684	3,050	12	13
K	14,467	3,370	23	13
Fe	1,347	653	48	13
Mn	1,201	393	33	13
Zn	463	169	36	12
Sr	434	67	15	12
SiO2	342	133	39	7
NH4	311	111	36	8
B	298	69	23	11
Ba	205	57	28	11
Li	202	39	20	13
Rb	110	52	47	4
Mg	109	192	176	13
Br	91.4	28.0	31	9
Pb	84	19	23	12
SO4	58.6	37.3	64	9
Cs	19.8	2.9	15	4
I	17.0	3.6	21	3
F	14.7	0.6	4	3
As	9.0	3.6	40	3
Cu	4.1	2.3	57	10
Al	2.4	1.2	51	5
Cd	1.9	0.5	27	7
Ag	1.6	0.7	43	3
TDS (%)	24.3%	2.8%	12	13

(Williams & McKibben, 1989, McKibben & Hardie, 1997, Duyvesteyn, 1992, Featherstone & Powell, 1981, Maimoni, 1982, Blake, 1974, Skinner et al., 1967, Palmer, 1975, Zudin et al., 1987.)

Table 2 provide the results of fluid analyses from three separate deep flow intervals in the SSSDP well identified below as State 2-14, data from two shallower commercial wells producing hypersaline (possibly "mixed") fluids of slightly lower TDS, and analyses from four wells producing low TDS fluids spanning the range of salinity from less than 2wt.% to 13wt.% TDS (Williams and McKibben, 1989).

Table 2: Flash Corrected Brine Analysis from Geothermal Wells in SSGRA from Williams and McKibben, 1989.

	HYPERSALINE					LOW T.D.S. (%)			
	SSSDP <sup>(k)</sup> Well, State 2-14			Commercial Well #11b	Commercial Well #10	Woolsey <sup>(f)</sup> Well #1	Commercial Well #81	I.I.D. <sup>(g)</sup> Well #3	Commercial Well #111
	12-1985	3-1986 <sup>(d)</sup>	6-1988 <sup>(e)</sup>						
Temp (°C)	305	330	320	300	295	240	230	195	200
pH	5.4	5.1	5.1	5.2	5.3	?	6.9	?	7.6
Depth (m)	1,850 - 1,890	2,500 - 3,220	1,830 - 2,200	960-1,070	700-1,070	570-720	710-940	7-520	40-990
Na	53,000 ppm	34,800	51,700	46,200	41,600	25,000	15,000	10,600	4,500
Ca	27,400	28,500	26,300	22,800	20,900	11,000	2,520	1,130	117
K	16,700	17,700	17,100	12,500	11,800	5,000	2,480	1,250	297
Fe	1,560	1,210	1,620	582	369	65	86	9.7	25
Mg	1,430	1,500	1,470	801	815	NA	60	6.4	ND
SiO <sub>2</sub> (c)	>461	>568	>840	>336	>404	NA	>255	>120	102
Zn	518	507	310	321	323	NA	14	NA	ND
Sr	411	421	470	376	365	513	112	85	10
B	257	271	380	204	197	NA	92	100	32
Ba	203	353 <sup>(h)</sup>	218	187	156	NA	45	3	0.3
Li	194	309	215	157	152	93	55	40	9
Hg	33	49	43	19	33	NA	54	74	24
Pb	100	102	107	69	67	NA	2.6	NA	ND
Cd	5.9	6.8	5.8	NA	2	NA	ND	NA	ND
Cu	2.2	2.3	2.2	1.0	1.6	NA	ND	NA	ND
Co	NA	NA	27	NA	NA	NA	NA	NA	NA
Ni <sup>+</sup>	333	330	356	239	241	NA	103	321	NA
Cl <sup>-</sup>	151,000	137,500	152,000	128,000	126,000	85,000	31,000	19,700	6,900
Br <sup>-</sup>	99	111	111	95	78	NA	24	13	10
CO <sub>2</sub> (a)	1,600	1,500	1,950	1,100	5,500	NA	10,000	NA	NA
H <sub>2</sub> S	15	10	NA	15	20	NA	NA	NA	NA
SO <sub>4</sub> <sup>-</sup>	63	53	~123	~100	53	NA	33	0.23	660
TDS	~25.6%	~26.5	~25.6	~21.4	~20.0	~12.7	~6.2	~3.5	~1.3

- (a) Volumetric measurement of total non-condensable gas.
- (b) Probable contamination from drilling fluid.
- (c) Silica values low due to precipitation prior to and during sampling.
- (d) Concentrations corrected for ~5% dilution by drilling fluid.
- (e) Short clean-out flow probably some contamination
- (f) Neudham et al. 1980
- (g) Muffler and White, 1969
- (h) Total dissolved solids
- (i) Salton Sea Scientific Drilling Project

Based on these data provide in Table 2, higher lithium content is associated with temperatures greater than 250°C and hypersaline in composition in SSGRA.

Figure 6 shows the depth in kilometers to the 250°C isotherm and associated hypersaline geothermal fluids approximal to the SSGRA.

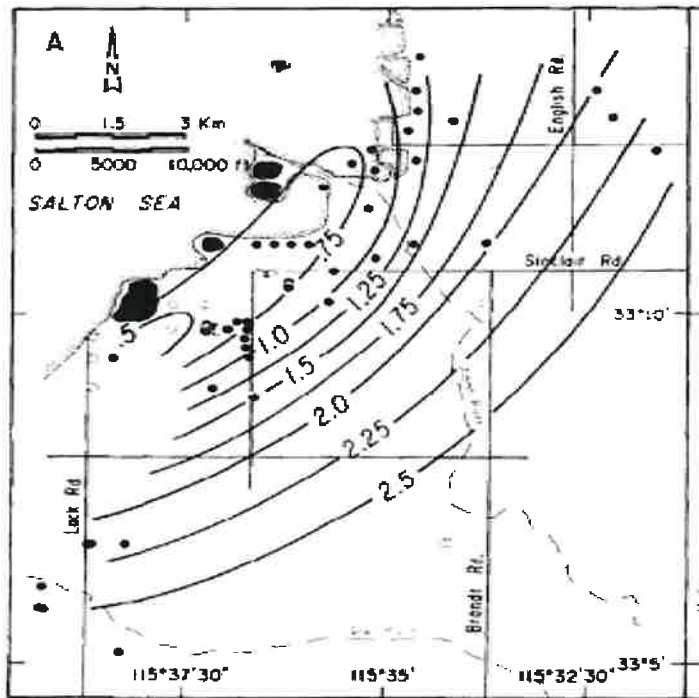


Figure 6. Depth in kilometers to the 250°C isotherm (Source: Williams and McKibben, 1989)

In the Loeltz et. al. (1975) study, groundwater quality samples were obtained from shallow artesian (flowing) wells. These wells were primarily in the eastern part of the valley that extended from about 2 miles north of the international boundary northward for about 30 miles in a 6- to 10-mile-wide belt between the Alamo River and the East Highline Canal (Figure 7).

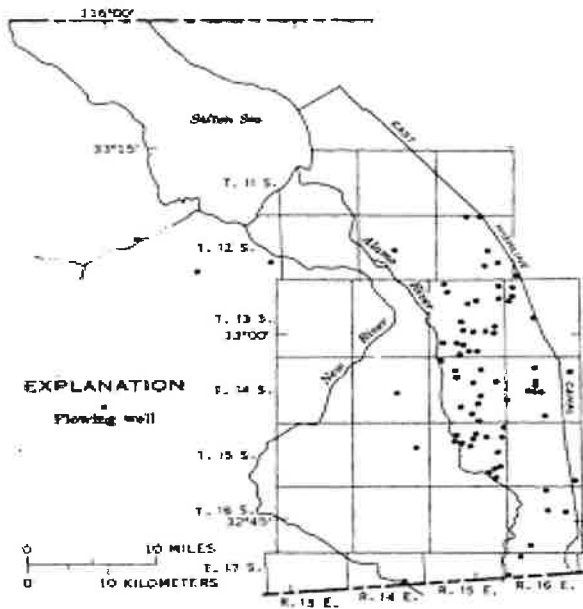


Figure 7. Shallow Artesian Wells in Eastern Imperial Valley

The artesian wells sampled as part of that study were 350 to 1,300 feet deep, casings ranged from 2 to 3 inches in diameter, were either slot perforated or not perforated, and open at the bottom and completed in fine- to medium-grained sand units. The total dissolved-solids content of the shallow (non-thermal) groundwater commonly ranges from 700 to 5,000 mg/L. The lithium concentrations in the shallow groundwater system ranged from 0.4 to 0.68 mg/L with a mean value of 0.21 mg/L. A cross-plot of lithium concentration versus depth shown in **Figure 8** indicate a small positive slope of the linear trend line where lithium concentrations increase with depth of the groundwater sample analyzed.

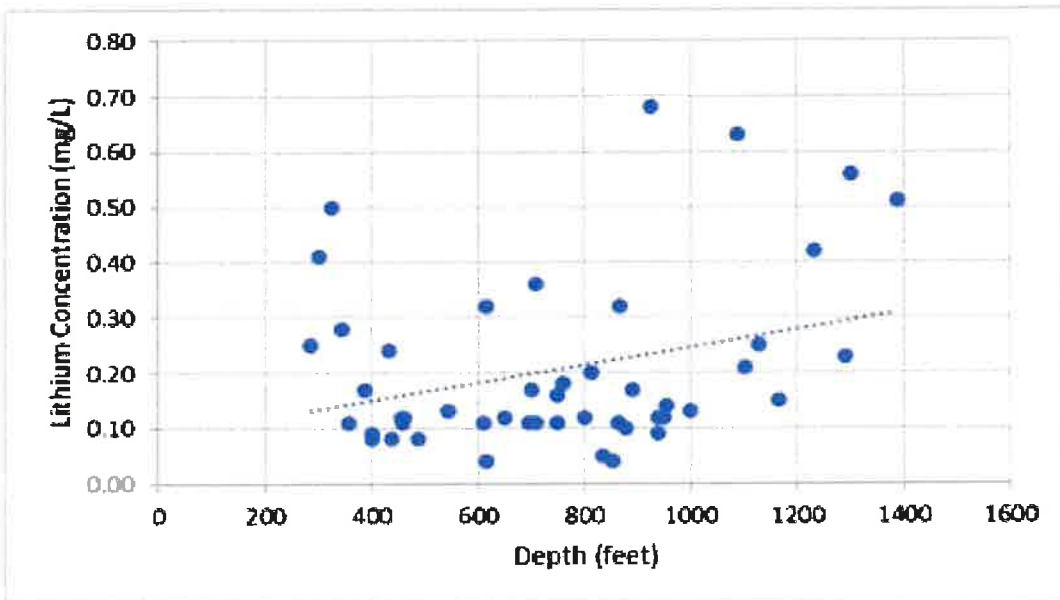
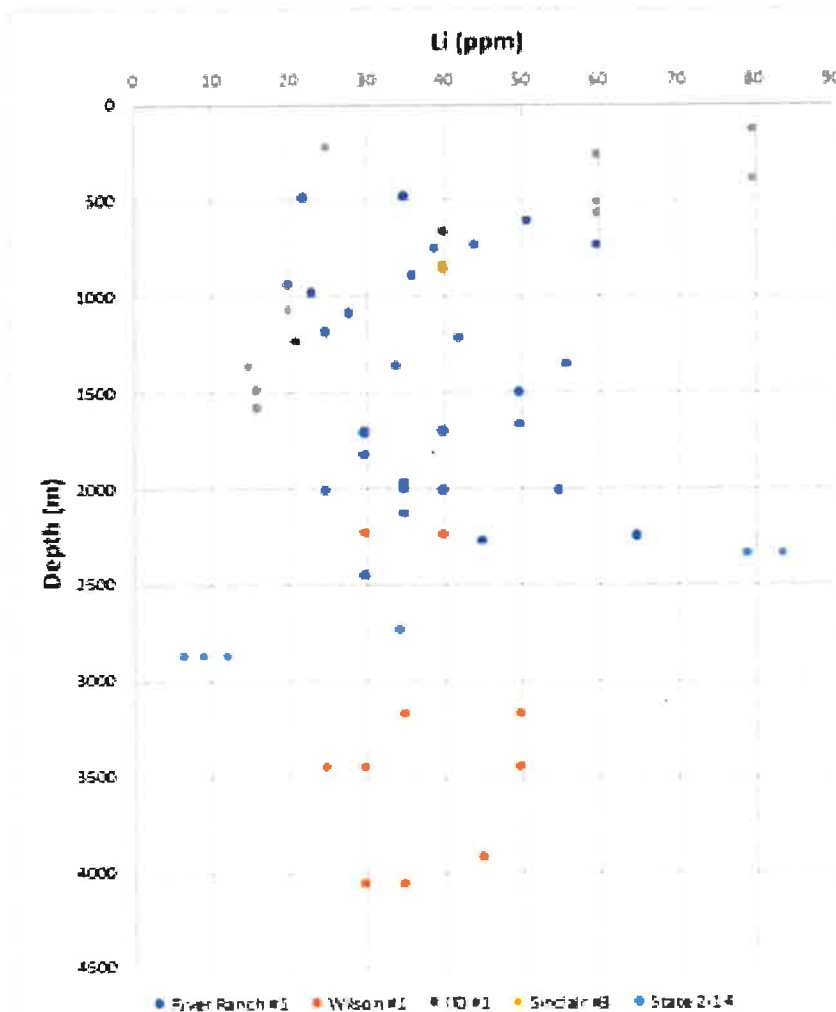


Figure 8. Cross-plot of Lithium Concentration in the Shallow Groundwater versus Depth

## 9. Potential Lithium in the Sedimentary Rocks

Lithium concentration of potential sources rock/sediment would be needed to replenish the dissolved supply content with reaction of reinjection of depleted brines. **Figure 9** shows the lithium data for these rock/sediment samples indicating a range from 15-80 ppm and an average of 40 ppm. This figure also includes whole-rock Li analyses for core samples from the California State 2-14 well.





**Figure 9. Lithium Concentration in Rock Samples versus depth**

The highest lithium concentrations in rock samples are found within mudstones and decrease with depth, with surface mudstones containing approximately 106 ppm lithium, mudstones at 2,358 meters (7,735 feet) containing approximately 82 ppm lithium, and mudstones from 2,745 meters (9,000 feet) contain about 34 ppm lithium. The mineral chlorite appears to be the main mineral host of lithium in the sedimentary rocks with lithium content of over 500 ppm but there is less lithium in chlorite grains from areas with higher temperatures (Dobson et. al., 2023). Chlorite is a common weathering product and is widespread in clay and in sedimentary rock containing clay minerals.

## 10. Regulations – Geothermal Wells

An exploratory well for geothermal or mineral extraction is regulated under Subchapter 4. Statewide Geothermal Regulations under the California Code Regulations Title 14 Natural Resources Division 2 Department of Conservation Chapter 4 Geologic Energy Management Division.

Where "Exploratory Geothermal Well" means a well other than a development well drilled to discover or evaluate the presence of either low-temperature or high-temperature geothermal fluids, including steam, where the surface

location of the well is at least 0.8 km or one-half mile from the surface location of an existing well capable of producing geothermal fluids in commercial quantities. A low- or high-temperature geothermal well may also be considered a mineral extraction well.

## 11. Area of Review

A 10-mile area of review (AOR) of the proposed well site location was conducted to identify any potential regulatory or geological constraints related to the construction of an exploratory geothermal well. The finding of the 10-mile area of review indicated the following related to the proposed exploratory well site:

1. The proposed site is located geographically in the Imperial Valley within the Salton Sea Geothermal Resource area of Imperial County (see **Exhibit 1**).
2. The surface sediments identified as (Q) consist of nonmarine (Lake deposits) unconsolidated and semi-consolidated sedimentary rocks of Pleistocene-Holocene age (see **Exhibit 2**).
3. Geologically the site is underlain by the Salton Trough created by a tectonic spreading center where the Pacific and North American Plates are spreading apart and moving laterally along the San Andreas fault (see **Exhibit 2**).
4. The site is located proximal to the Brawley Seismic Zone and other small faults associated with the structural development of the Salton Trough (see **Exhibit 2**). The Kalin Fault transects the NW section of the proposed site with fault plane trending NE-SW and oriented 70 degrees from vertical. The NW corner of the proposed site is not recommended for the proposed exploratory well due to the increased risk of encountering unstable geologic conditions while drilling or its potential impact of lateral or vertical movement on well integrity long-term.
5. **Exhibit 3** shows 446 geothermal wells within a 10-mile radius of the proposed site. A detailed summary of the 446 geothermal wells is provided in **Attachment No. 1**.
6. **Exhibit 3** shows the location of a single oil/gas well identified as API 402500030 (Salton Sea Chemical #5) within a 2-mile radius of the proposed site. The CalGem database indicates the status of this well as an idle dry hole owned by Salton Sea Chemical Company.
7. **Exhibit 4** shows 49 geothermal wells with a 2-mile radius of the proposed site with no active geothermal wells within a ½ mile radius. A detailed summary of the 49 geothermal wells is provided in **Attachment No. 2**.
8. **Exhibit 5** shows several types of shallow groundwater wells within a 10-mile radius of the proposed site. These wells range in depth from 5 to 930 feet. The deeper wells are classified as "Water Supply Industrial" wells. Most of the wells shown on **Exhibit 5** serve as monitoring or cathodic protection wells. A detailed summary of the shallow groundwater wells is provided in **Attachment No. 3**.
9. **Exhibit 6** shows Groundwater Ambient Monitoring and Assessment (GAMA) wells. These are shallow groundwater wells where water quality data is provided by the California State Water Control Board. A detailed summary of the shallow groundwater wells is provided in **Attachment No. 4**.

## 12. Exploratory Well Construction and Testing Plan

The proposed exploratory well drill/testing and construction program will proceed in a phased approach to gain sufficient information on the lithologic and water quality characteristics of the drilled open-hole section from depth of 500 to 6,000 feet.

The recommended drilling/testing and well construction sequence and proposed sequence of work:

1. Drill/auger a 36-inch borehole, install 100 feet of 30-inch, 157 lb./ft steel casing and cement annulus from the base of 30-inch casing to surface.
2. Install well cellar
3. Drill a nominal 30-inch borehole from 100 to 500 feet, circulate, clean.
4. Install 500 feet of 24-inch 125.5 lb./ft, X-60 steel casing.
5. Cement the annulus of the 24-inch casing from its base to surface.
6. Install and test pressure control well head equipment to be witnessed by the State
7. Drill-out cement plug with appropriate diameter bit and borehole assembly (BHA)

8. Drill a nominal 10-inch borehole from 500 to 1,500 feet, circulate drilling fluid. Obtain 4-inch full diameter cores at approximately 200-foot intervals based on information from the drill cutting returns.
9. Run Platform Express Density-Neutron, SP-GR-Caliper, GR Spectroscopy and Array Induction Logs. Based on the results of the geophysical logs run the sidewall coring tool and modular dynamic tester (MDT) to obtain 2-inch rock plugs and water samples from specified depths, if downhole conditions are favorable.
10. Submit rock plug for geotechnical and mineralogical analysis and water samples for laboratory analysis for major cations and metal analyses.
11. Conduct flow test(s) on 500 to 1,500 foot interval and obtain composite water samples for detailed laboratory analysis.
12. Ream nominal 10-inch borehole to nominal 24 inches from 500 to 1,500 feet and run inclination survey every 60 feet.
13. Install 1,500 feet of 18 5/8-inch 87.5 lb./ft steel casing and cement annulus to surface.
14. Install and test well pressure control well head and witnessed by the State.
15. Drill-out cement plug with appropriate diameter bit and borehole assembly (BHA).
16. Drill a nominal 10-inch borehole from 1,500 to 2,700 feet, circulate drilling fluid upon completion. Monitor well drilling fluid temperature and CO<sub>2</sub> – H<sub>2</sub>S content. Obtain 4-inch full diameter cores at approximately 200 foot intervals based on information from drill cutting returns
17. Run Platform Express Density-Neutron, SP-GR-Caliper, GR Spectroscopy and Array Induction, acoustic televiewer logs. Based on the results of the geophysical logs run the sidewall coring tool and modular dynamic tester (MDT) to obtain rock/water samples from specified depths, if downhole conditions allow based drilling data and mud log information.
18. Conduct flow test on 1,500 to 2,700 foot interval and obtain composite and discrete (down hole water sampler) water samples for detailed laboratory analysis
19. Complete data review to determine if objectives have been met,  
**Decision Point** – If so, discontinue drilling/testing operations, if not proceed to Step 20
20. Ream nominal 10-inch borehole to nominal 18 inches from 1,500 to 2,700 feet and run inclination survey every 60 feet and conduct directional survey upon completion.
21. Install 2,700 feet of 13 3/8-inch 72 lb./ft N80 HC steel casing and cement annulus to surface.
22. Install and pressure test well control well head equipment to be witnessed by the State.
23. Drill-out cement plug with appropriate diameter bit and borehole assembly (BHA).
24. Drill nominal 12-inch borehole from 2,700 to 6,000 feet. Upon completion circulated drilling fluids to clean borehole prior to geophysical logging operations.
25. Run Platform Express Density-Neutron, SP-GR-Caliper, GR Spectroscopy, Array Induction and Acoustic Televiewer Logs. Based on the results of the geophysical logs run the sidewall coring tool and modular dynamic tester (MDT) to obtain rock/water samples from specified depths, if downhole conditions allow based on drilling data and mud log information.
26. Review all data from 2,700 to 6,000 feet to determine the following:
  - a. If the objectives were met with the initial total depth of 6,000 feet.
  - b. If objective have been met and borehole integrity will be maintained then remove drilling fluid and run production including temperature, pressure, fluid resistivity logs.
  - c. Conduct flow test on 2,700 -6000 foot interval. Obtain production (rate) and water sample for detailed laboratory analysis.
  - d. If borehole integrity cannot be maintained then install 10 ¾-inch perforated or slotted liner from 2,600 to 6,000 feet.  
**Decision Point** - decision will be needed at this point to install more expensive corrosion resistant alloy (i.e., 2507 Super Duplex) or suitable steel liner (slotted or perforated) based on long-term objectives – only exploratory in nature or to be used as a future extraction or injection well.
  - e. If the objective have not been met then determine if the nominal 12-inch borehole needs to be deepened to acquire additional geologic, water quality and production data.
  - f. If the nominal 12-inch borehole is to be deepen then determine if an additional casing string (e.g., 10 ¾ inch) needs to be installed below 2,700 feet to maintain safe drilling conditions to the proposed total depth.
  - g. Once drilling and geologic/geophysical/water quality/production data indicate objectives have been met decide final completion method similar to Steps 26 a-b.

A schematic of the proposed exploratory well design is provided in **Figure 10** with a typical wellhead completion shown in **Figure 11**.

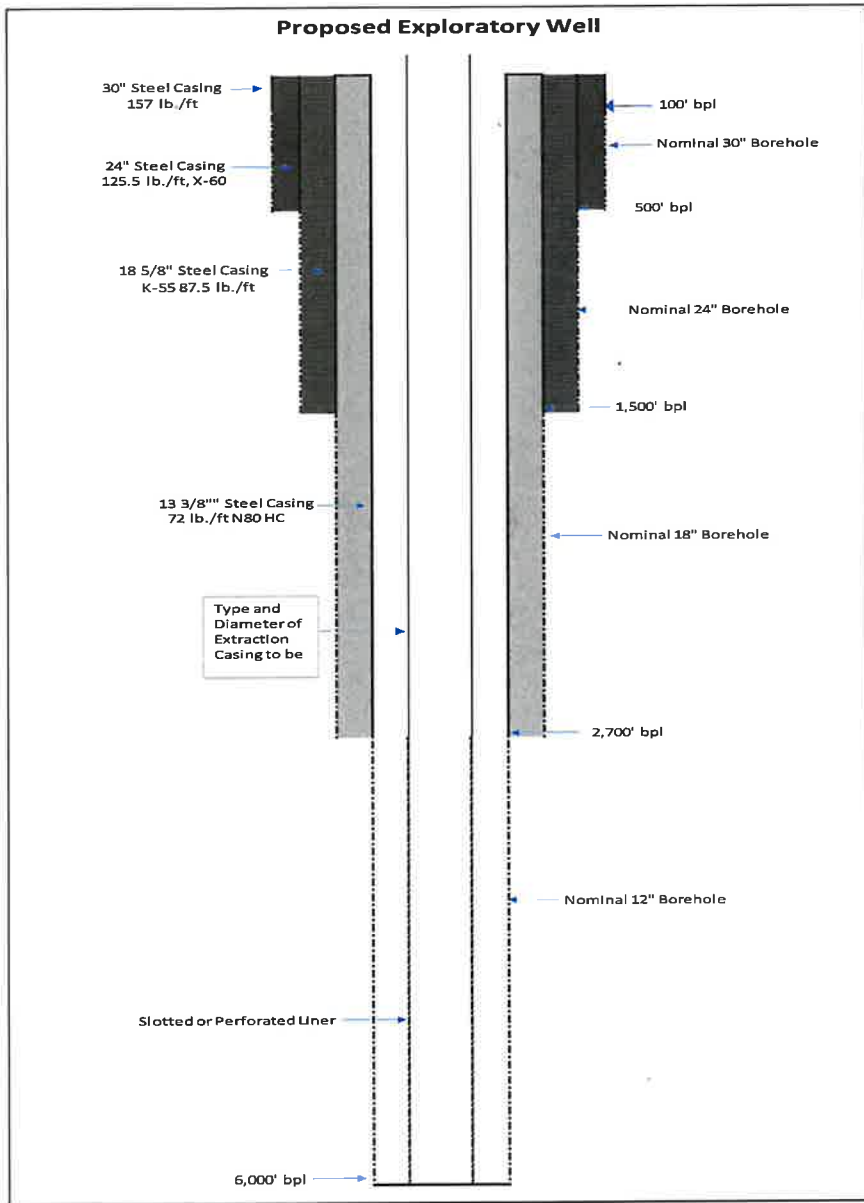


Figure 10. Proposed Exploratory Well Design Schematic

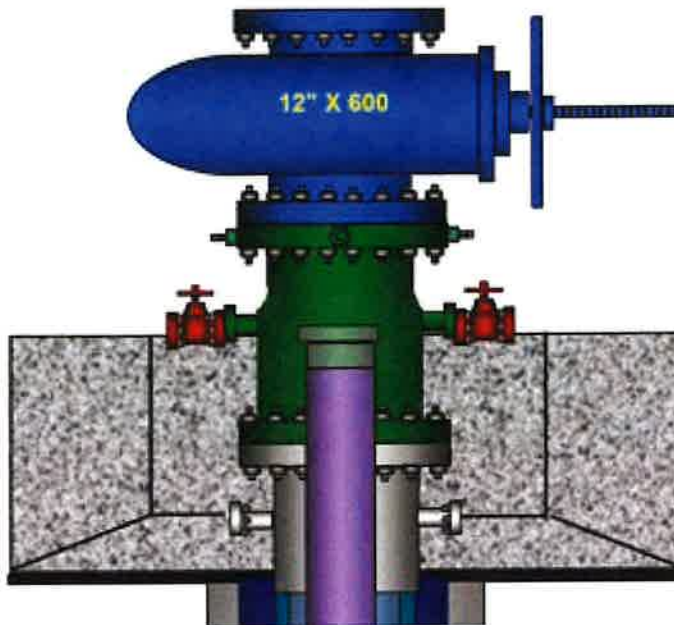


Figure 11. Proposed Design of the Surface Completion for the Exploratory Well.

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**Column heading**

Table text

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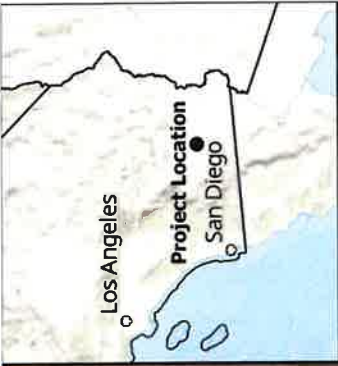
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## Exhibits

EEC ORIGINAL PKG





**Legend**

- Canal
- River
- Major Road
- Salton Sea Geothermal Resource Area
- Other Known Geothermal Resource Area (KGRA)
- Imperial County Boundary
- US State Boundary

**Source** - California Department of Conservation, California Natural Resources Area, Data.gov, California State Geoportal

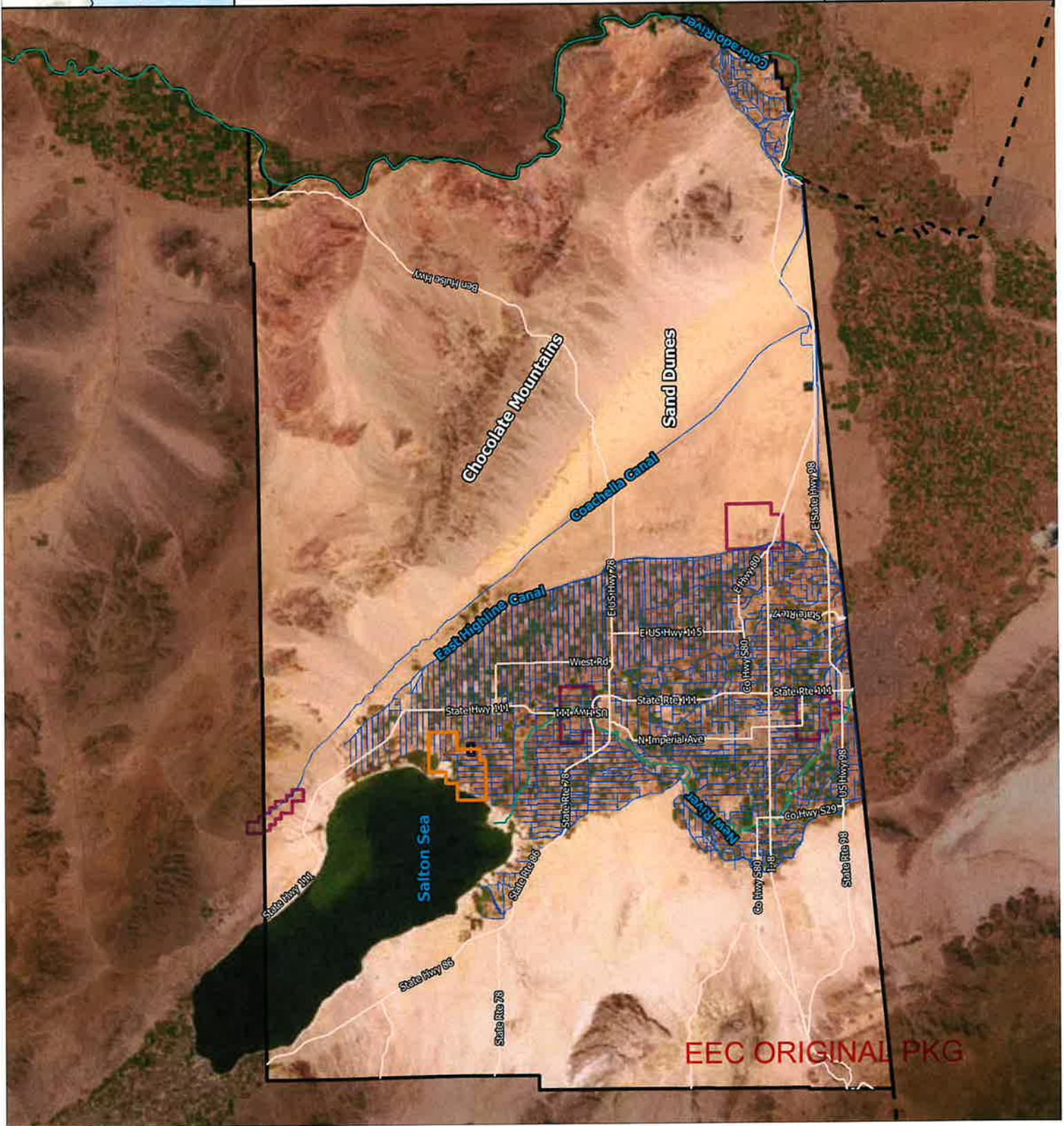
**Imperial County Site Map**

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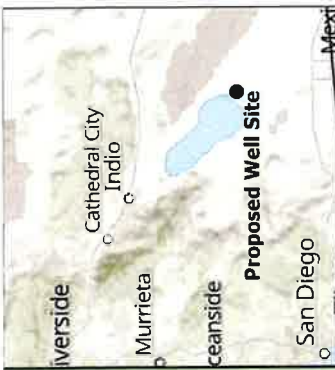
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**AECOM**

Exhibit 1  
Date Saved 5/2/2024



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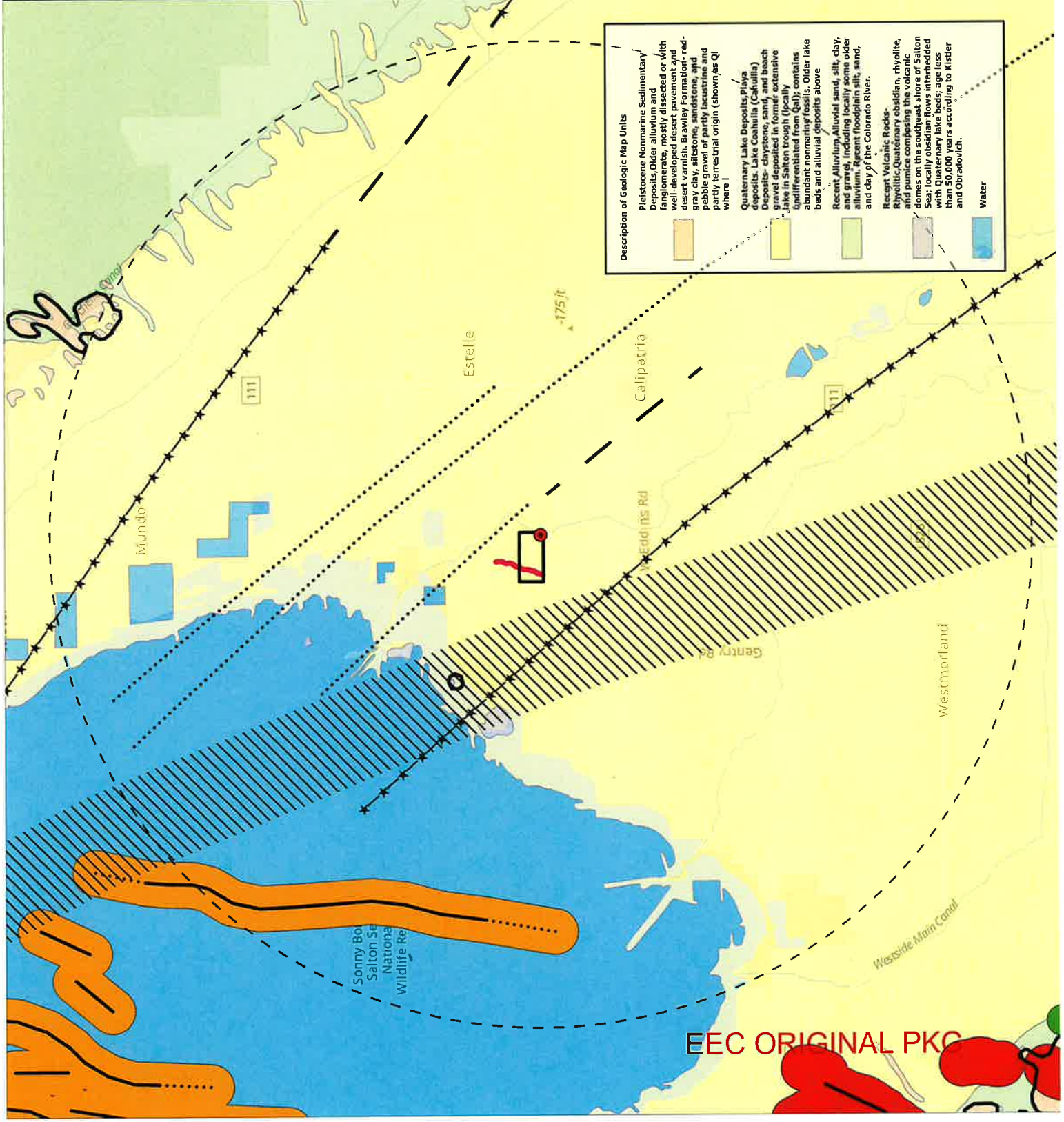
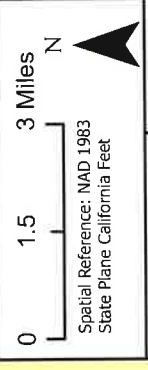
- Proposed Well
- Area of Review Parcel Boundary
- Ten Mile Expanded Study Area
- Historic FAM Buffer
- Holocene FAM Buffer
- Late Quaternary FAM Buffer
- Brawley Seismic Zone
- Kalin Fault Traces

**Fault Type**

- ..... fault, concealed
- contact, certain
- - - fault, approx. located
- ★ fault, concealed, queried
- fault, certain

**Source** - California Department of Conservation

## Geologic Faults Within The Area of Review Map

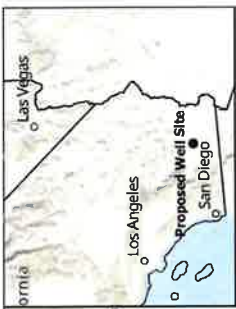


**Description of Geologic Map Units**

- Pleistocene Nonmarine Sedimentary Deposits, Older alluvium and fanlomerate, mostly dissected or with well-developed desert pavement, and desert varnish, gravel, coarse and medium siltstone, lacustrine and pebble gravel of partly lacustrine and partly terrrestrial origin (shown as Q1 where I)
- Quaternary Lake Deposits, Playa deposits, Lake Coachella (Coachulla) Deposits- chlystone, sand, and beach gravel deposited in former extensive lake in Salton trough (locally undifferentiated from Q1); contains abundant nonmarine fossils. Older lake beds and alluvial deposits above
- Recent Alluvium-Alluvial sand, silt, clay, and gravel, including locally some older alluvium. Recent floodplain silt, sand, and clay of the Colorado River.
- Recent Volcanic Rocks- Rhyolitic, Quaternary obsidian, rhyolite, and pumice comprising the volcanic dome on the southeast shore of Salton Sea; locally obsidian flows interbedded with Quaternary lake beds, age similar to those of the Saltonians according to Hester and Obradovich.
- Water

EEC ORIGINAL PKC





**Legend**

- Proposed Well Location
- Area of Review Parcel
- Boundary
- Half Mile Expanded Study Area
- One Mile Expanded Study Area
- Two Mile Expanded Study Area

**Geothermal Well Status, Type**

- Active, Development Water
- Active, Injection
- Active, Observation
- Buried, Injection
- Idle, Development Water
- New, Injection
- Plugged, Development Water
- Plugged, Experimental Water
- Plugged, Observation
- Plugged, Thermal Gradient

**Oil & Gas Well Status, Type**

- Idle, Dry Hole
- Salton Sea Geothermal Resource Area

0402500030 - Geothermal, Oil, and Gas Well API Number (ID)  
 Source - California Department of Natural Resources

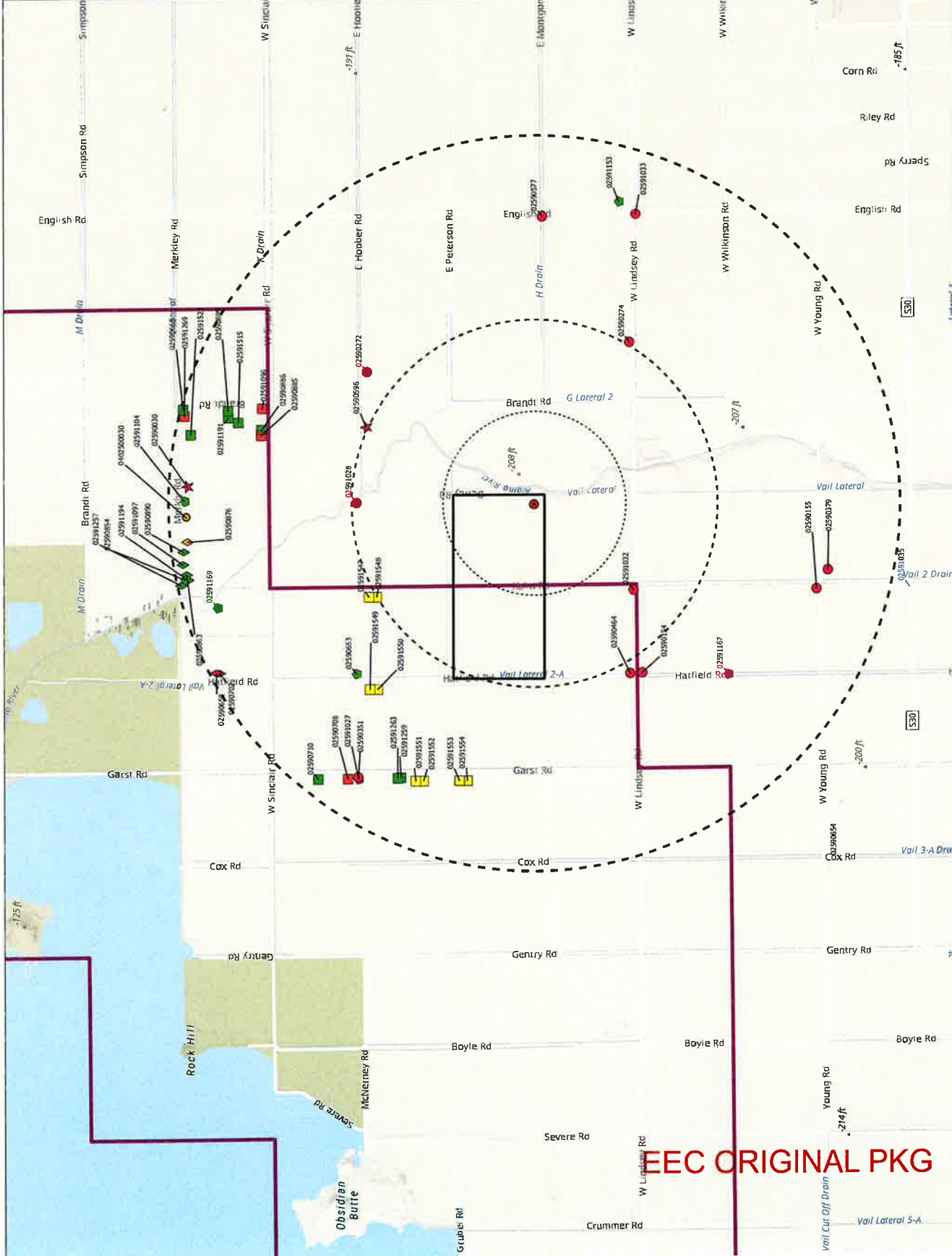
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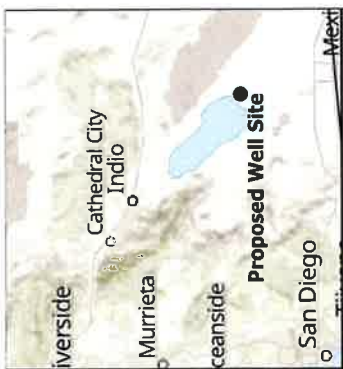
**Geothermal Wells Within a 2-Mile Area of Review**

**AECOM**

Exhibit 4  
 Date Saved: 5/2/2024



**EEC ORIGINAL PKG**



**Legend**

- Proposed Well
- Study Parcel Boundary
- Ten Mile Expanded Study Area
- Well Completion Report
- Catholic Protection
- Monitoring
- Other
- Test Well
- Unknown
- Water Supply Domestic
- Water Supply Industrial
- Water Supply Irrigation - Agriculture

**Source** - California Department of Water Resources

## Shallow Ground Water Wells Within the 10-Mile Area of Review

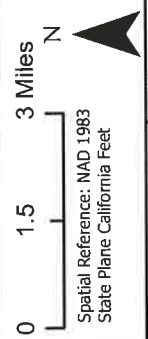
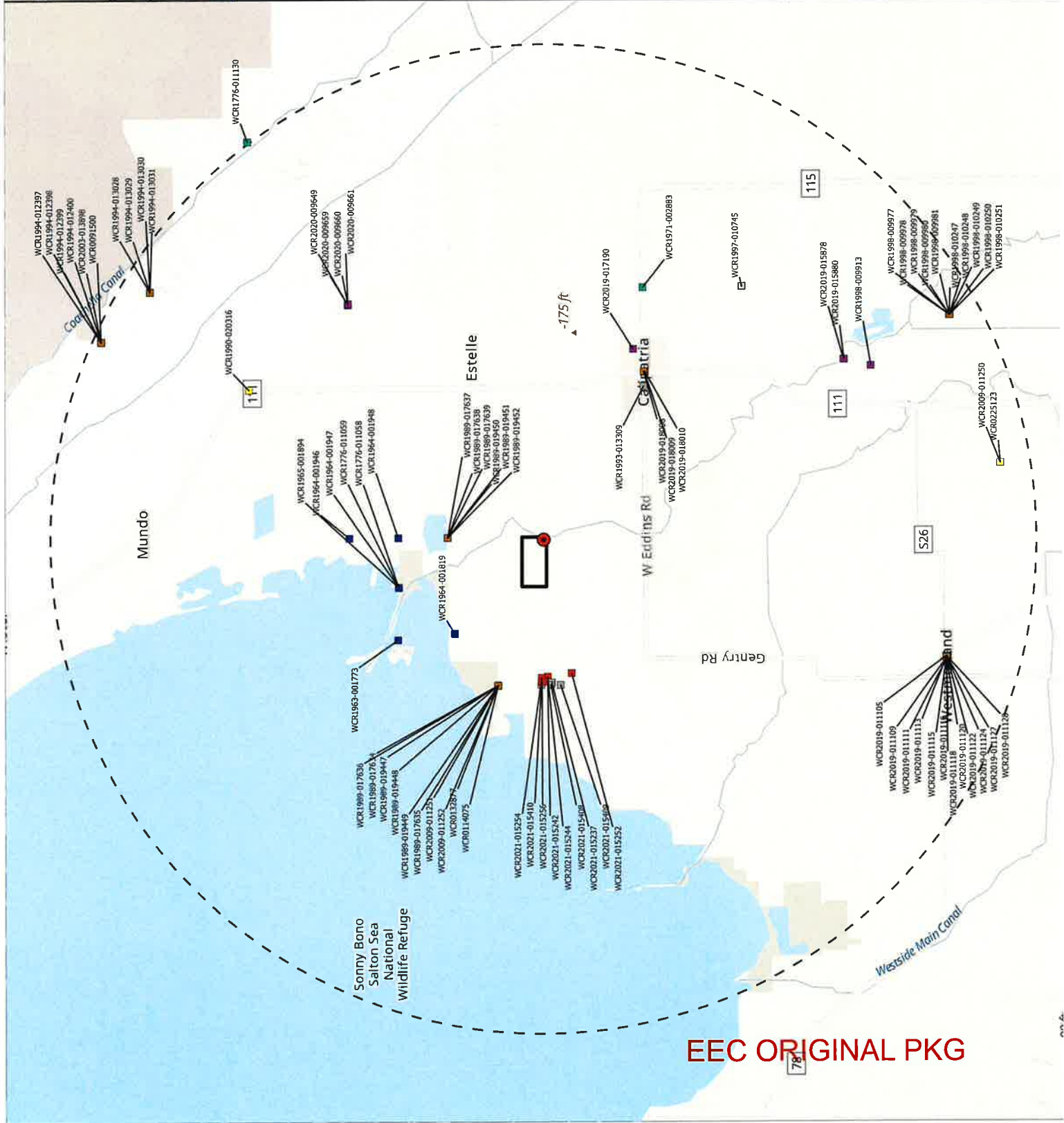
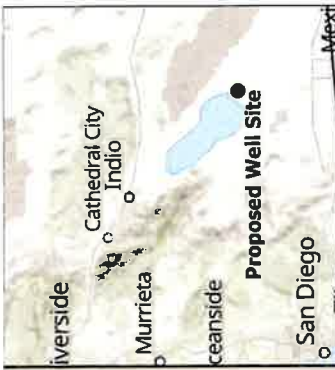


Exhibit	5
Date Saved	5/2/2024



EEC ORIGINAL PKG



- Legend**
- Proposed Well
  - ▭ Study Parcel Boundary
  - - - Ten Mile Expanded Study Area
  - GAMA Well Description
  - Department of Water Resources, Water Supply
  - USGS NWIS, Monitoring
  - USGS NWIS, Water Supply
  - WB Cleanup, Monitoring
- Source** - California Department of Water Resources

### Shallow Ground Water Wells Within the 10-Mile Area of Review

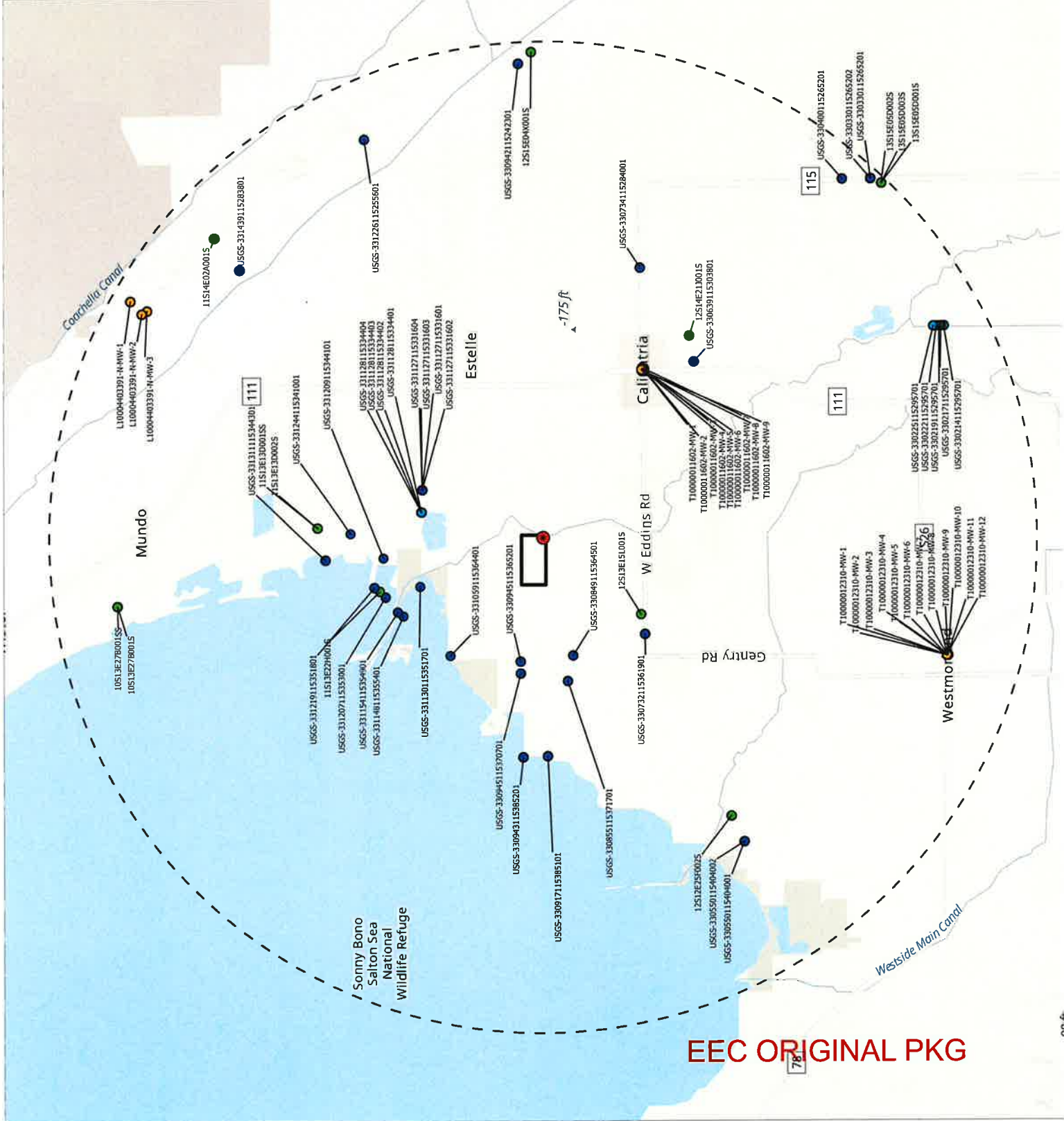
0 1.5 3 Miles

Spatial Reference: NAD 1983  
State Plane California Feet

North Arrow

**AECOM**

Exhibit 6  
Date Saved 5/2/2024



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## **Attachments**

**EEC ORIGINAL PKG**

Attachment No.1 - Geothermal Wells within a 10 mile radius of the proposed site

API Number	GeoDistrict	WellStatus	WellType	WellSymbol	CountyName	LeaseName	WellNumber	OperatorCo	FieldName	TownshipSe	Range	Lat83	Long83
2590003	2 P	EWT	EWT	EWT	Imperial	Dearborn	1	MAGPO	SNSEA	30 12S	13E	33.10118	-115.6585
2590010	2 P	EWT	EWT	EWT	Imperial	Magmamax	1	CALOC	SNSEA	33 11S	13E	33.1627	-115.6188
2590011	2 P	OBS	OBS	OBS	Imperial	Magmamax	2	CALOC	SNSEA	33 11S	13E	33.16891	-115.6312
2590012	2 P	OBS	OBS	OBS	Imperial	Magmamax	3	CALOC	SNSEA	33 11S	13E	33.16896	-115.6236
2590013	2 P	OBS	OBS	OBS	Imperial	Magmamax	4	CALOC	SNSEA	33 11S	13E	33.16906	-115.624
2590014	2 P	DWT	DWT	DWT	Imperial	Woolsey	1	CALOC	SNSEA	33 11S	13E	33.1631	-115.6151
2590015	2 P	EWT	EWT	EWT	Imperial	Sinclair	1	GEMC	SNSEA	10 12S	13E	33.14707	-115.614
2590016	2 P	DWT	DWT	DWT	Imperial	Sinclair	2	GEMC	SNSEA	4 12S	13E	33.148	-115.6222
2590017	2 P	DWT	DWT	DWT	Imperial	Sinclair	3	GEMC	SNSEA	10 12S	13E	33.14646	-115.6135
2590018	2 P	DWT	DWT	DWT	Imperial	Sinclair	4	GEMC	SNSEA	4 12S	13E	33.14858	-115.6222
2590019	2 P	DWT	DWT	DWT	Imperial	IID	1	IMPTP	SNSEA	23 11S	13E	33.20208	-115.5928
2590020	2 P	DWT	DWT	DWT	Imperial	IID	2	IMPTP	SNSEA	22 11S	13E	33.19659	-115.5991
2590021	2 P	INJ	INJ	INJ	Imperial	IID	3	IMPTP	SNSEA	23 11S	13E	33.20532	-115.5887
2590022	2 P	DWT	DWT	DWT	Imperial	State of Calif.	1	IMPTP	SNSEA	23 11S	13E	33.19162	-115.5891
2590023	2 P	EWT	EWT	EWT	Imperial	Sportsman	1	IMPTP	SNSEA	23 11S	13E	33.20056	-115.5878
2590024	2 P	EWT	EWT	EWT	Imperial		1	PIONR	SNSEA	10 11S	13E	33.22579	-115.6093
2590025	2 P	EWT	EWT	EWT	Imperial		2	PIONR	SNSEA	10 11S	13E	33.22527	-115.6093
2590026	2 P	EWT	EWT	EWT	Imperial		3	PIONR	SNSEA	10 11S	13E	33.22481	-115.6088
2590027	2 P	EWT	EWT	EWT	Imperial	J.J. Elmore	1	CALOC	SNSEA	27 11S	13E	33.1831	-115.613
2590028	2 P	EWT	EWT	EWT	Imperial	Hudson	1	CALOC	SNSEA	13 11S	13E	33.21226	-115.5706
2590029	2 P	EWT	EWT	EWT	Imperial	River Ranch	1	CALOC	SNSEA	24 11S	13E	33.20282	-115.5788
2590030	2 P	EWT	EWT	EWT	Imperial	Grace	1	VANHG	SNSEA	19 12S	13E	33.18306	-115.5702
2590033	2 P	EWT	EWT	EWT	Imperial		1	SSPC	SNSEA	28 11S	13E	33.18101	-115.6205
2590036	2 P	OBS	OBS	OBS	Imperial	Elmore	3	CALOC	SNSEA	27 11S	13E	33.17754	-115.6136
2590060	2 P	INJ	INJ	INJ	Imperial	Kruger	1	UOC-S	BRWLY	17 13S	14E	33.01875	-115.5998
2590077	2 P	DWT	DWT	DWT	Imperial	Jimenez	1	UOC-S	BRWLY	15 13S	14E	33.02614	-115.5298
2590082	2 P	EWT	EWT	EWT	Imperial	Landers	2	UOC-S	BRWLY	20 12S	13E	33.11142	-115.6479
2590084	2 P	EWT	EWT	EWT	Imperial	Landers	1	UOC-S		20 12S	13E	33.11157	-115.6404
2590088	2 P	TG	TG	TG	Imperial	Westmorland	30	REPUB		20 12S	13E	33.10461	-115.6317
2590089	2 P	TG	TG	TG	Imperial	Westmorland	31	REPUB		16 12S	13E	33.122	-115.6146
2590090	2 P	TG	TG	TG	Imperial	Westmorland	32	REPUB		22 12S	13E	33.10789	-115.606
2590091	2 P	TG	TG	TG	Imperial	Westmorland	33	REPUB		27 12S	13E	33.09086	-115.6057
2590092	2 P	TG	TG	TG	Imperial	Westmorland	34	REPUB		33 12S	13E	33.08328	-115.6228
2590094	2 P	TG	TG	TG	Imperial	Westmorland	36	REPUB		2 13S	12E	33.05961	-115.6956
2590096	2 P	TG	TG	TG	Imperial	Westmorland	38	REPUB		3 13S	13E	33.06856	-115.6133
2590097	2 P	TG	TG	TG	Imperial	Westmorland	39	REPUB		3 13S	13E	33.05203	-115.6234
2590099	2 P	TG	TG	TG	Imperial	Westmorland	41	REPUB		15 13S	13E	33.0221	-115.6131
2590101	2 P	TG	TG	TG	Imperial	Westmorland	43	REPUB		2 13S	13E	33.0475	-115.6038
2590102	2 P	TG	TG	TG	Imperial	Westmorland	44	REPUB		13 13S	13E	33.0163	-115.5825
2590103	2 P	TG	TG	TG	Imperial	Westmorland	45	REPUB		23 12S	13E	33.10457	-115.5882
2590104	2 P	TG	TG	TG	Imperial	Westmorland	46	REPUB		24 12S	12E	33.11118	-115.667
2590105	2 P	TG	TG	TG	Imperial	Westmorland	47	REPUB		24 12S	12E	33.10989	-115.6836
2590113	2 P	TG	TG	TG	Imperial	Westmorland	1	REPUB		6 13S	13E	33.06802	-115.6654
2590114	2 P	TG	TG	TG	Imperial	Westmorland	2	REPUB		1 13S	12E	33.06635	-115.6787
2590115	2 P	TG	TG	TG	Imperial	Westmorland	3	REPUB		5 13S	13E	33.05252	-115.6483
2590117	2 P	TG	TG	TG	Imperial	Westmorland	5	REPUB		12 13S	12E	33.04572	-115.6823
2590118	2 P	TG	TG	TG	Imperial	Westmorland	6	REPUB		6 13S	13E	33.05167	-115.6651
2590120	2 P	TG	TG	TG	Imperial	Westmorland	8	REPUB		7 13S	13E	33.03748	-115.6653
2590121	2 P	TG	TG	TG	Imperial	Westmorland	9	REPUB		4 13S	13E	33.06596	-115.6298



2590124	2 P	TG	Imperial	Westmorland	12 REPUB	8 13S	13E	33.03769	-115.6476
2590125	2 P	TG	Imperial	Westmorland	13 REPUB	32 12S	13E	33.08629	-115.6402
2590126	2 P	TG	Imperial	Westmorland	14 REPUB	36 12S	12E	33.08417	-115.6741
2590127	2 P	TG	Imperial	Westmorland	15 REPUB	30 12S	13E	33.0974	-115.6569
2590128	2 P	TG	Imperial	Westmorland	16 REPUB	20 12S	13E	33.11754	-115.6398
2590129	2 P	TG	Imperial	Westmorland	17 REPUB	13 12S	12E	33.12366	-115.6671
2590130	2 P	TG	Imperial	Westmorland	18 REPUB	20 12S	13E	33.11078	-115.648
2590131	2 P	TG	Imperial	Westmorland	19 REPUB	12 13S	13E	33.0381	-115.5861
2590133	2 P	TG	Imperial	Westmorland	21 REPUB	6 13S	13E	33.05597	-115.6726
2590135	2 P	TG	Imperial	Westmorland	23 REPUB	3 13S	12E	33.07444	-115.7108
2590136	2 P	TG	Imperial	Westmorland	24 REPUB	35 12S	12E	33.08876	-115.6911
2590137	2 P	TG	Imperial	Westmorland	25 REPUB	31 12S	13E	33.08572	-115.6491
2590138	2 P	TG	Imperial	Westmorland	26 REPUB	25 12S	12E	33.10003	-115.6743
2590139	2 P	TG	Imperial	Westmorland	27 REPUB	17 12S	13E	33.12915	-115.648
2590147	2 P	TG	Imperial	W	4 FMRP	4 13S	13E	33.0662	-115.6351
2590148	2 P	TG	Imperial	W	5 FMRP	11 13S	12E	33.05478	-115.6962
2590150	2 P	EWT	Imperial	Dearborn	1 UOC-S	30 12S	13E	33.09578	-115.658
2590152	2 P	EWT	Imperial	Landers	3 UOC-S	20 12S	13E	33.11148	-115.6486
2590154	2 P	TG	Imperial	Salton Sea	1 REPUB	11 12S	13E	33.14712	-115.5881
2590155	2 P	TG	Imperial	Salton Sea	2 REPUB	11 12S	13E	33.13332	-115.5804
2590156	2 P	TG	Imperial	Westmorland	49 REPUB	6 13S	13E	33.04467	-115.6702
2590157	2 P	TG	Imperial	Westmorland	50 REPUB	15 13S	13E	33.01573	-115.6128
2590158	2 P	TG	Imperial	Westmorland	51 REPUB	15 13S	13E	33.02324	-115.6173
2590159	2 P	TG	Imperial	Westmorland	52 REPUB	10 13S	13E	33.03025	-115.613
2590160	2 P	TG	Imperial	Westmorland	53 REPUB	14 13S	13E	33.0233	-115.6033
2590161	2 P	TG	Imperial	Westmorland	54 REPUB	9 13S	13E	33.03014	-115.6302
2590162	2 P	TG	Imperial	Westmorland	55 REPUB	29 12S	13E	33.1002	-115.6396
2590164	2 P	EWT	Imperial	Kalin Farms	1 WESGA	32 12S	13E	33.08556	-115.6412
2590168	2 P	EWT	Imperial	Dearborn	2 UOC-S	30 12S	13E	33.09611	-115.6586
2590172	2 P	EWT	Imperial	Rutherford	1 CHEVU	8 13S	14E	33.03049	-115.553
2590187	2 P	EWT	Imperial	Brandt	1 CHEVU	17 13S	14E	33.01612	-115.5522
2590193	2 A	INJ	Imperial	IID	5 CALOC	5 12S	13E	33.15549	-115.6478
2590194	2 A	OBS	Imperial	IID	6 CALOC	5 12S	13E	33.16077	-115.6474
2590196	2 A	INJ	Imperial	Sinclair	15 CALOC	5 12S	13E	33.14804	-115.6481
2590203	2 P	INJ	Imperial	IW	5 CALOC	33 11S	13E	33.16353	-115.6172
2590209	2 P	TG	Imperial		101 SANFE	21 12S	15E	33.11041	-115.4144
2590234	2 P	OBS	Imperial	Sinclair	13 CALOC	5 12S	13E	33.15423	-115.6405
2590255	2 P	EWT	Imperial	Currier	1 UOC-S	15 13S	13E	33.02245	-115.6168
2590256	2 P	EWT	Imperial	Currier	2 UOC-S	15 13S	13E	33.02245	-115.6188
2590272	2 P	TG	Imperial	Brandt	6 UREC	31 11S	14E	33.16877	-115.5597
2590274	2 P	TG	Imperial	Brandt	10 UREC	6 12S	14E	33.14791	-115.5571
2590279	2 P	EWT	Imperial	Fee	1 REPUB	17 11S	14E	33.21957	-115.5398
2590299	2 P	TG	Imperial	I	4 FMRP	18 12S	15E	33.11888	-115.4456
2590300	2 P	TG	Imperial	I	5 FMRP	6 11S	15E	33.24871	-115.4542
2590301	2 P	TG	Imperial	I	6 FMRP	7 11S	14E	33.1844	-115.5028
2590303	2 P	TG	Imperial	I	8 FMRP	27 13S	14E	33.03683	-115.5605
2590315	2 P	EWT	Imperial	Britz	3 REPUB	21 11S	14E	33.2047	-115.5267
2590317	2 P	TG	Imperial		80-1 UOC-S	21 10S	14E	33.28203	-115.5263
2590318	2 P	TG	Imperial		80-2 UOC-S	29 11S	15E	33.19051	-115.4327
2590319	2 P	TG	Imperial		80-3 UOC-S	32 11S	14E	33.16672	-115.5276
2590320	2 P	TG	Imperial		80-4 UOC-S	30 12S	15E	33.10338	-115.4503

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2590351	2 P	OBS	OBS	Imperial	Barretta	1 CALOC	SNSEA	34 11S	13E	33.16977	-115.9979
2590352	2 A	OBS	OBS	Imperial	Elmore	2 CALOC	SNSEA	26 11S	13E	33.17723	-115.597
2590358	2 P	TG	TG	Imperial	C	287 CHEVU		28 10S	14E	33.26857	-115.5247
2590359	2 P	TG	TG	Imperial	C	288 CHEVU		2 11S	14E	33.24721	-115.4925
2590363	2 P	TG	TG	Imperial	C	292 CHEVU		14 11S	14E	33.21224	-115.4922
2590364	2 P	TG	TG	Imperial	C	293 CHEVU		32 10S	14E	33.25999	-115.544
2590368	2 P	TG	TG	Imperial	C	297 CHEVU		19 11S	14E	33.19803	-115.5511
2590369	2 P	TG	TG	Imperial	C	298 CHEVU		24 11S	14E	33.20466	-115.4754
2590370	2 P	TG	TG	Imperial	C	299 CHEVU		30 11S	15E	33.19053	-115.4517
2590371	2 P	TG	TG	Imperial	C	300 CHEVU		34 11S	14E	33.17562	-115.4946
2590372	2 P	TG	TG	Imperial	C	301 CHEVU		28 11S	14E	33.19015	-115.5213
2590373	2 P	TG	TG	Imperial	C	302 CHEVU		30 11S	14E	33.18493	-115.5609
2590376	2 P	TG	TG	Imperial	C	305 CHEVU		8 12S	13E	33.13959	-115.5286
2590377	2 P	TG	TG	Imperial	C	306 CHEVU		16 12S	13E	33.13195	-115.6161
2590378	2 P	TG	TG	Imperial	C	307 CHEVU		14 12S	13E	33.1198	-115.5814
2590379	2 P	TG	TG	Imperial	C	308 CHEVU		13 12S	13E	33.13239	-115.5787
2590381	2 P	TG	TG	Imperial	C	310 CHEVU		18 12S	14E	33.12917	-115.5457
2590382	2 P	TG	TG	Imperial	C	311 CHEVU		4 12S	14E	33.16141	-115.5211
2590383	2 P	TG	TG	Imperial	C	312 CHEVU		1 12S	14E	33.15486	-115.4648
2590385	2 P	TG	TG	Imperial	C	314 CHEVU		7 12S	15E	33.13977	-115.4477
2590387	2 P	TG	TG	Imperial	C	316 CHEVU		33 11S	15E	33.17577	-115.4145
2590389	2 P	TG	TG	Imperial	C	318 CHEVU		4 12S	15E	33.15588	-115.4221
2590391	2 P	TG	TG	Imperial	C	320 CHEVU		16 12S	15E	33.12607	-115.4161
2590392	2 P	TG	TG	Imperial	C	321 CHEVU		8 13S	13E	33.03071	-115.6547
2590399	2 P	TG	TG	Imperial	C	328 CHEVU		19 12S	15E	33.11079	-115.4429
2590400	2 P	TG	TG	Imperial	C	329 CHEVU		4 13S	14E	33.07374	-115.5257
2590401	2 P	TG	TG	Imperial	C	330 CHEVU		1 13S	14E	33.06964	-115.4742
2590402	2 P	TG	TG	Imperial	C	331 CHEVU		35 12S	14E	33.08309	-115.4849
2590403	2 P	TG	TG	Imperial	C	332 CHEVU		31 12S	15E	33.17592	-115.4443
2590404	2 P	TG	TG	Imperial	C	333 CHEVU		24 12S	14E	33.11329	-115.4648
2590405	2 P	TG	TG	Imperial	C	334 CHEVU		28 12S	14E	33.1028	-115.5168
2590406	2 P	TG	TG	Imperial	C	335 CHEVU		1 13S	13E	33.06667	-115.5855
2590407	2 P	TG	TG	Imperial	C	336 CHEVU		35 12S	13E	33.08867	-115.5806
2590408	2 P	TG	TG	Imperial	C	337 CHEVU		16 12S	13E	33.11962	-115.63
2590409	2 P	TG	TG	Imperial	C	338 CHEVU		4 13S	13E	33.05246	-115.6264
2590449	2 P	DWT	DWT	Imperial	M	6 CALOC	SNSEA	33 11S	13E	33.16247	-115.624
2590450	2 A	OBS	OBS	Imperial	M	8 CALOC	SNSEA	33 11S	13E	33.16288	-115.631
2590451	2 B	INJ	INJ	Imperial	IID	11 CALOC	SNSEA	5 12S	13E	33.16122	-115.6475
2590452	2 P	DWT	DWT	Imperial	IID	12 CALOC	SNSEA	5 12S	13E	33.15517	-115.6444
2590454	2 P	DWT	DWT	Imperial	Sinclair	20 CALOC	SNSEA	5 12S	13E	33.15514	-115.6437
2590455	2 P	INJ	INJ	Imperial	Sinclair	25 CALOC	SNSEA	5 12S	13E	33.14829	-115.6479
2590461	2 P	TG	TG	Imperial		81-06 UOC-S		30 12S	14E	33.09103	-115.5455
2590462	2 P	TG	TG	Imperial		81-04 UOC-S		8 11S	14E	33.23484	-115.5363
2590463	2 P	TG	TG	Imperial		81-07 UOC-S		25 12S	12E	33.10348	-115.674
2590464	2 P	TG	TG	Imperial		81-17 UOC-S		15 12S	13E	33.1188	-115.6131
2590465	2 P	TG	TG	Imperial		81-18 UOC-S		2 12S	13E	33.14808	-115.5882
2590465	2 P	TG	TG	Imperial		81-19 UOC-S		4 12S	14E	33.14804	-115.5182
2590506	2 A	OBS	OBS	Imperial	IID	9 CALOC	SNSEA	5 12S	13E	33.1552	-115.645
2590549	2 P	TG	TG	Imperial		83-06 UOC-S		24 10S	13E	33.28466	-115.5633
2590550	2 P	TG	TG	Imperial		83-08 UOC-S		31 10S	14E	33.25791	-115.5618
2590551	2 P	TG	TG	Imperial		83-09 UOC-S		3 11S	14E	33.23533	-115.4962

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2590560	2 P	TG	Imperial	Brawley	1 GRACE	BRWLY	17 13S	14E	33.01528	-115.5451
2590576	2 P	TG	Imperial	Calipatria	1 LAHON		16 12S	14E	33.12102	-115.5178
2590577	2 P	TG	Imperial	Calipatria	2 LAHON		6 12S	14E	33.15478	-115.5452
2590581	2 P	EWT	Imperial	Fee	5 REPUB		17 11S	14E	33.21362	-115.5367
2590586	2 P	EWT	Imperial	Imperial Brandt	1 IEC		35 12S	13E	33.07635	-115.5856
2590593	2 P	EWT	Imperial	Britz	4 REPUB		21 11S	14E	33.20515	-115.5267
2590594	2 A	OBS	Imperial	84-1	CALOC	SNSEA	5 12S	13E	33.15559	-115.6478
2590595	2 P	OBS	Imperial	84-2	UOC-S	SNSEA	5 12S	13E	33.1552	-115.6454
2590596	2 P	EWT	Imperial	Salton Sea	1 CALOC		36 11S	13E	33.16888	-115.5648
2590597	2 P	TG	Imperial	P	45444 KENNE		6 11S	14E	33.24136	-115.5535
2590599	2 P	TG	Imperial	P	45447 KENNE		34 12S	12E	33.08189	-115.7013
2590604	2 A	INJ	Imperial	M	16 CALOC	SNSEA	33 11S	13E	33.16337	-115.6151
2590606	2 P	DWT	Imperial	M	5 CALOC	SNSEA	33 11S	13E	33.16272	-115.624
2590607	2 P	DWT	Imperial	M	7 CALOC	SNSEA	33 11S	13E	33.16319	-115.6238
2590608	2 P	DWT	Imperial	M	12 CALOC	SNSEA	33 11S	13E	33.16348	-115.6207
2590609	2 P	DWT	Imperial	M	14 CALOC	SNSEA	33 11S	13E	33.16269	-115.6205
2590617	2 P	EWT	Imperial	Fee	6 REPUB		17 11S	14E	33.21327	-115.5366
2590618	2 P	DWT	Imperial	M	9 CALOC	SNSEA	33 11S	13E	33.16349	-115.6238
2590619	2 A	DWT	Imperial	M	10 CALOC	SNSEA	33 11S	13E	33.16328	-115.6214
2590620	2 P	DWT	Imperial	M	11 CALOC	SNSEA	33 11S	13E	33.16379	-115.6224
2590621	2 P	DWT	Imperial	M	13 CALOC	SNSEA	33 11S	13E	33.16264	-115.6213
2590622	2 P	OBS	Imperial	M	15 CALOC	SNSEA	33 11S	13E	33.16269	-115.6208
2590623	2 B	INJ	Imperial	IW	1 CALOC	SNSEA	34 11S	13E	33.17273	-115.6065
2590624	2 P	OBS	Imperial	IW	2 CALOC	SNSEA	34 11S	13E	33.17305	-115.6064
2590625	2 P	INJ	Imperial	IW	3 CALOC	SNSEA	34 11S	13E	33.17426	-115.6064
2590626	2 B	INJ	Imperial	IW	4 CALOC	SNSEA	34 11S	13E	33.17629	-115.6097
2590627	2 P	INJ	Imperial	IW	6 CALOC	SNSEA	34 11S	13E	33.17616	-115.61
2590628	2 P	INJ	Imperial	IW	7 CALOC	SNSEA	34 11S	13E	33.17628	-115.6103
2590632	2 P	DWT	Imperial	State	45336 CALOC	SNSEA	14 11S	13E	33.20815	-115.5807
2590633	2 A	DWT	Imperial	Vonderahe	1 CALOC	SNSEA	5 12S	13E	33.15542	-115.6395
2590634	2 A	OBS	Imperial	85-1	CALOC	SNSEA	5 12S	13E	33.15696	-115.6432
2590635	2 A	OBS	Imperial	85-2	CALOC	SNSEA	5 12S	13E	33.15628	-115.6464
2590649	2 A	OBS	Imperial	ELM	1 CALOC	SNSEA	27 11S	13E	33.17747	-115.6141
2590651	2 A	OBS	Imperial	RED	1 CALOC	SNSEA	22 11S	13E	33.20017	-115.6097
2590652	2 A	OBS	Imperial	GEE	1 CALOC	SNSEA	24 11S	13E	33.19772	-115.5689
2590653	2 A	OBS	Imperial	HAT	1 CALOC	SNSEA	35 11S	13E	33.16984	-115.588
2590654	2 A	OBS	Imperial	YOU	1 CALOC	SNSEA	15 12S	13E	33.13158	-115.606
2590655	2 A	OBS	Imperial	LIN	1 CALOC	SNSEA	8 12S	13E	33.14726	-115.6403
2590658	2 P	DWT	Imperial	Elmore	4 CALOC	SNSEA	26 11S	13E	33.1809	-115.5877
2590661	2 P	OBS	Imperial	86-1	UOC-S	SNSEA	32 11S	13E	33.16752	-115.6351
2590662	2 P	OBS	Imperial	86-2	UOC-S	SNSEA	32 11S	13E	33.17127	-115.6355
2590663	2 A	OBS	Imperial	OBS	1 CALOC	SNSEA	32 11S	13E	33.17361	-115.6388
2590665	2 A	INJ	Imperial	River Ranch	3 CALOC	SNSEA	25 11S	13E	33.18333	-115.563
2590669	2 P	DWT	Imperial	Del Ranch	1 CALOC	SNSEA	33 11S	13E	33.16633	-115.6158
2590670	2 P	DWT	Imperial	Del Ranch	2 CALOC	SNSEA	33 11S	13E	33.16623	-115.6156
2590671	2 P	DWT	Imperial	Del Ranch	3 CALOC	SNSEA	4 12S	13E	33.16182	-115.6149
2590672	2 P	DWT	Imperial	Del Ranch	4 CALOC	SNSEA	4 12S	13E	33.15978	-115.6149
2590673	2 P	DWT	Imperial	Del Ranch	5 CALOC	SNSEA	4 12S	13E	33.15783	-115.615
2590674	2 A	OBS	Imperial	Del Ranch	6 CALOC	SNSEA	4 12S	13E	33.15736	-115.615
2590675	2 P	INJ	Imperial	Del Ranch	7 CALOC	SNSEA	33 11S	13E	33.1665	-115.6155
2590676	2 P	DWT	Imperial	Del Ranch	8 CALOC	SNSEA	4 12S	13E	33.15509	-115.615

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2590677	2 B	INJ	INJ	Imperial	Del Ranch Inj	1 CALOC	SNSEA	34 115	13E	33.17251	-115.6062
2590678	2 A	INJ	INJ	Imperial	Del Ranch Inj	2 CALOC	SNSEA	34 115	13E	33.17234	-115.6061
2590679	2 A	INJ	INJ	Imperial	Del Ranch Inj	3 CALOC	SNSEA	34 115	13E	33.17211	-115.6061
2590681	2 A	DWT	DWT	Imperial	Elmore	14 CALOC	SNSEA	26 115	13E	33.18348	-115.5964
2590685	2 P	DWT	DWT	Imperial	Wilson	45303 CALOC	SNSEA	12 115	13E	33.22686	-115.5794
2590695	2 P	DWT	DWT	Imperial	Imperial	45304 CALOC	SNSEA	13 115	13E	33.21369	-115.5784
2590702	2 P	DWT	DWT	Imperial	J.J. Elmore	6 CALOC	SNSEA	26 115	13E	33.18065	-115.5878
2590703	2 P	OBS	OBS	Imperial	J.J. Elmore	10 CALOC	SNSEA	27 115	13E	33.18373	-115.6109
2590704	2 A	OBS	OBS	Imperial	J.J. Elmore	11 CALOC	SNSEA	27 115	13E	33.18376	-115.6107
2590705	2 A	DWT	DWT	Imperial	J.J. Elmore	12 CALOC	SNSEA	27 115	13E	33.18369	-115.6054
2590706	2 P	DWT	DWT	Imperial	J.J. Elmore	13 CALOC	SNSEA	27 115	13E	33.18367	-115.6052
2590708	2 B	INJ	INJ	Imperial	J.J. Elmore IW	3 CALOC	SNSEA	34 115	13E	33.17059	-115.5978
2590709	2 A	INJ	INJ	Imperial	J.J. Elmore IW	4 CALOC	SNSEA	34 115	13E	33.17577	-115.5978
2590710	2 A	INJ	INJ	Imperial	J.J. Elmore IW	5 CALOC	SNSEA	34 115	13E	33.17296	-115.5978
2590711	2 A	INJ	INJ	Imperial	J.J. Elmore IW	6 CALOC	SNSEA	27 115	13E	33.17719	-115.601
2590714	2 P	OBS	OBS	Imperial	84-3	UOC-S	SNSEA	32 115	13E	33.16714	-115.6399
2590715	2 P	OBS	OBS	Imperial	84-4	UOC-S	SNSEA	32 115	13E	33.16576	-115.6319
2590716	2 A	OBS	OBS	Imperial	84-5	CALOC	SNSEA	5 125	13E	33.16119	-115.6465
2590717	2 A	OBS	OBS	Imperial	84-6	CALOC	SNSEA	5 125	13E	33.16192	-115.6401
2590718	2 P	OBS	OBS	Imperial	84-7	UOC-S	SNSEA	5 125	13E	33.162	-115.6319
2590719	2 I	OBS	OBS	Imperial	84-8	CALOC	SNSEA	5 125	13E	33.15857	-115.6401
2590720	2 P	OBS	OBS	Imperial	84-9	UOC-S	SNSEA	5 125	13E	33.15826	-115.6317
2590721	2 P	OBS	OBS	Imperial	84-10	UOC-S	SNSEA	4 125	13E	33.15728	-115.6232
2590722	2 P	OBS	OBS	Imperial	84-11	CALOC	SNSEA	5 125	13E	33.15491	-115.6319
2590723	2 P	OBS	OBS	Imperial	84-12	UOC-S	SNSEA	5 125	13E	33.14766	-115.6476
2590724	2 P	OBS	OBS	Imperial	84-13	UOC-S	SNSEA	5 125	13E	33.1476	-115.6395
2590725	2 P	OBS	OBS	Imperial	84-14	UOC-S	SNSEA	5 125	13E	33.14764	-115.6323
2590726	2 A	OBS	OBS	Imperial	IID	10 CALOC	SNSEA	5 125	13E	33.1554	-115.6472
2590727	2 P	INJ	INJ	Imperial	Del Ranch Inj	4 CALOC	SNSEA	33 115	13E	33.16547	-115.6182
2590734	2 P	TG	TG	Imperial	P3-9	BEARM		21 105	13E	33.28539	-115.6238
2590735	2 P	TG	TG	Imperial	P3-10	BEARM		28 105	13E	33.28001	-115.6301
2590736	2 P	TG	TG	Imperial	P3-12	BEARM		28 105	13E	33.27094	-115.606
2590737	2 P	TG	TG	Imperial	P3-15	BEARM		34 105	13E	33.26188	-115.6037
2590738	2 P	TG	TG	Imperial	P3-17	BEARM		3 115	13E	33.17594	-115.6058
2590739	2 P	TG	TG	Imperial	P3-20	BEARM		11 115	13E	33.23658	-115.5865
2590740	2 P	TG	TG	Imperial	P4-9	BEARM		12 125	12E	33.14171	-115.6684
2590741	2 P	TG	TG	Imperial	P4-13	BEARM		23 125	12E	33.12063	-115.6944
2590742	2 P	TG	TG	Imperial	P4-14	BEARM		28 125	12E	33.09504	-115.7268
2590743	2 P	TG	TG	Imperial	P4-16	BEARM		26 125	12E	33.09307	-115.6944
2590744	2 P	TG	TG	Imperial	P4-17	BEARM		34 125	12E	33.08225	-115.7094
2590745	2 P	TG	TG	Imperial	P4-18	BEARM		34 125	12E	33.08384	-115.716
2590748	2 P	TG	TG	Imperial	P2-4	BEARM		22 105	13E	33.29077	-115.6077
2590749	2 P	TG	TG	Imperial	P2-6	BEARM		26 105	13E	33.28012	-115.5992
2590750	2 P	TG	TG	Imperial	P2-9	BEARM		35 105	13E	33.26177	-115.5909
2590751	2 P	TG	TG	Imperial	P2-10	BEARM		2 115	13E	33.24824	-115.5907
2590752	2 P	TG	TG	Imperial	P2-11	BEARM		1 115	13E	33.24751	-115.5823
2590753	2 P	TG	TG	Imperial	P2-13	BEARM		12 115	13E	33.23671	-115.5821
2590754	2 P	TG	TG	Imperial	P2-14	BEARM		12 115	13E	33.22554	-115.5778
2590755	2 P	TG	TG	Imperial	P2-15	BEARM		13 115	13E	33.22191	-115.5734
2590756	2 P	TG	TG	Imperial	P1-1	BEARM		25 115	12E	33.18391	-115.6749
2590757	2 P	TG	TG	Imperial	P1-2	BEARM		35 115	12E	33.16944	-115.6918

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2590758	2 P	TG	TG	TG	Imperial	P1-3	BEARM	36 115	12E	33.16965	-115.6748
2590759	2 P	TG	TG	TG	Imperial	P1-4	BEARM	3 125	12E	33.15395	-115.7097
2590760	2 P	TG	TG	TG	Imperial	P1-5	BEARM	12 125	12E	33.14874	-115.686
2590761	2 P	TG	TG	TG	Imperial	P1-6	BEARM	1 125	12E	33.15416	-115.6749
2590762	2 P	TG	TG	TG	Imperial	P1-7	BEARM	9 125	12E	33.13954	-115.7208
2590763	2 P	TG	TG	TG	Imperial	P1-8	BEARM	10 125	12E	33.13961	-115.7096
2590764	2 P	TG	TG	TG	Imperial	P1-9	BEARM	11 125	12E	33.14046	-115.6857
2590765	2 P	TG	TG	TG	Imperial	P1-11	BEARM	16 125	12E	33.11104	-115.7268
2590766	2 P	TG	TG	TG	Imperial	P1-14	BEARM	13 125	12E	33.12016	-115.6686
2590767	2 P	TG	TG	TG	Imperial	P1-17	BEARM	22 125	12E	33.11099	-115.7097
2590768	2 P	TG	TG	TG	Imperial	P1-19	BEARM	25 125	12E	33.10576	-115.6813
2590769	2 P	TG	TG	TG	Imperial	P1-20	BEARM	24 125	12E	33.10556	-115.6727
2590846	2 A	INJ	INJ	INJ	Imperial	Sinclair	21 CALOC	5 125	13E	33.14801	-115.6394
2590848	2 A	INJ	INJ	INJ	Imperial	Sinclair	22 CALOC	5 125	13E	33.14802	-115.6392
2590854	2 A	OBS	OBS	OBS	Imperial	River Ranch	7 CALOC	25 115	13E	33.1833	-115.5789
2590859	2 I	INJ	INJ	INJ	Imperial	Sinclair	23 CALOC	5 125	13E	33.14805	-115.6389
2590863	2 A	DWT	DWT	DWT	Imperial	River Ranch	8 CALOC	25 115	13E	33.18315	-115.5785
2590871	2 A	DWT	DWT	DWT	Imperial	Sinclair	10 CALOC	5 125	13E	33.15529	-115.6389
2590876	2 I	DWT	DWT	DWT	Imperial	River Ranch	12 CALOC	5 125	13E	33.18308	-115.5754
2590880	2 A	OBS	OBS	OBS	Imperial	IID	7 CALOC	5 125	13E	33.15596	-115.6472
2590885	2 B	INJ	INJ	INJ	Imperial	River Ranch	4 CALOC	25 115	13E	33.17719	-115.5655
2590886	2 A	INJ	INJ	INJ	Imperial	River Ranch	5 CALOC	25 115	13E	33.17717	-115.565
2590887	2 P	TG	TG	TG	Imperial	88-1	CALOC	20 105	14E	33.28478	-115.5294
2590889	2 A	INJ	INJ	INJ	Imperial	River Ranch	6 CALOC	25 115	13E	33.17979	-115.5631
2590890	2 A	DWT	DWT	DWT	Imperial	River Ranch	11 CALOC	25 115	13E	33.18339	-115.5764
2590947	2 P	TG	TG	TG	Imperial	B75	2 UOC-S	18 135	14E	33.01489	-115.556
2590948	2 P	TG	TG	TG	Imperial	B75	3 UOC-S	5 135	14E	33.04359	-115.5528
2590949	2 P	TG	TG	TG	Imperial	B75	4 UOC-S	5 135	14E	33.04378	-115.541
2590950	2 P	TG	TG	TG	Imperial	B75	5 UOC-S	5 135	14E	33.06934	-115.5521
2590951	2 P	TG	TG	TG	Imperial	B75	6 UOC-S	2 135	14E	33.07329	-115.5037
2590952	2 P	TG	TG	TG	Imperial	B75	7 UOC-S	2 135	14E	33.06487	-115.4881
2590953	2 P	TG	TG	TG	Imperial	B75	9 UOC-S	12 135	14E	33.03692	-115.4834
2590954	2 P	TG	TG	TG	Imperial	B75	9 UOC-S	11 135	14E	33.03654	-115.4994
2590961	2 P	TG	TG	TG	Imperial	B75	16 UOC-S	17 135	14E	33.02261	-115.5518
2590962	2 P	TG	TG	TG	Imperial	B75	17 UOC-S	8 135	14E	33.02922	-115.5445
2590963	2 P	TG	TG	TG	Imperial	B75	18 UOC-S	9 135	14E	33.03951	-115.5274
2590964	2 P	TG	TG	TG	Imperial	B75	19 UOC-S	9 135	14E	33.03065	-115.523
2590965	2 P	TG	TG	TG	Imperial	B75	20 UOC-S	15 135	14E	33.02723	-115.5091
2590967	2 P	TG	TG	TG	Imperial	B75	22 UOC-S	3 135	14E	33.04515	-115.5123
2590972	2 P	TG	TG	TG	Imperial	B75	27 UOC-S	9 135	14E	33.04104	-115.5351
2590973	2 P	TG	TG	TG	Imperial	B75	28 UOC-S	8 135	14E	33.04102	-115.5522
2590974	2 P	TG	TG	TG	Imperial	B75	29 UOC-S	7 135	14E	33.02934	-115.5569
2590975	2 P	TG	TG	TG	Imperial	B75	30 UOC-S	16 135	14E	33.02311	-115.5358
2590977	2 P	TG	TG	TG	Imperial	B75	32 UOC-S	17 135	14E	33.01515	-115.5432
2590979	2 P	TG	TG	TG	Imperial	B75	34 UOC-S	3 135	14E	33.05879	-115.5172
2590980	2 P	TG	TG	TG	Imperial	B75	35 UOC-S	4 135	14E	33.06698	-115.5269
2590993	2 P	TG	TG	TG	Imperial	C	141 CHEVU	3 135	14E	33.05064	-115.5195
2590994	2 P	TG	TG	TG	Imperial	C	142 CHEVU	3 135	14E	33.05184	-115.5118
2590996	2 P	TG	TG	TG	Imperial	C	144 CHEVU	3 135	14E	33.05852	-115.5198
2590997	2 P	TG	TG	TG	Imperial	C	145 CHEVU	4 135	14E	33.05858	-115.5258
2590998	2 P	TG	TG	TG	Imperial	C	146 CHEVU	4 135	14E	33.05854	-115.5357

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2591007	2 P	TG	TG	Imperial	C	155 CHEVU	3 13S	14E	33.05821	-115.5112
2591008	2 P	TG	TG	Imperial	C	156 CHEVU	5 13S	14E	33.0584	-115.5437
2591019	2 P	TG	TG	Imperial	TP	3 FMRP	31 10S	14E	33.26355	-115.5603
2591020	2 P	TG	TG	Imperial	TP	4 FMRP	5 11S	14E	33.24177	-115.5302
2591021	2 P	TG	TG	Imperial	TP	5 FMRP	3 11S	14E	33.2418	-115.4973
2591023	2 P	TG	TG	Imperial	TP	8 FMRP	8 11S	14E	33.22086	-115.5367
2591024	2 P	TG	TG	Imperial	TP	9 FMRP	16 11S	14E	33.21251	-115.5147
2591025	2 P	TG	TG	Imperial	TP	10 FMRP	20 11S	14E	33.19829	-115.5444
2591026	2 P	TG	TG	Imperial	TP	11 FMRP	28 11S	14E	33.19051	-115.5109
2591027	2 P	TG	TG	Imperial	TP	12 FMRP	34 11S	13E	33.16978	-115.5976
2591028	2 P	TG	TG	Imperial	TP	13 FMRP	36 11S	13E	33.16968	-115.5719
2591029	2 P	TG	TG	Imperial	TP	14 FMRP	32 11S	14E	33.16958	-115.5415
2591030	2 P	TG	TG	Imperial	TP	15 FMRP	4 12S	14E	33.16169	-115.5109
2591031	2 P	TG	TG	Imperial	TP	16 FMRP	5 12S	13E	33.15482	-115.6479
2591032	2 P	TG	TG	Imperial	TP	17 FMRP	2 12S	13E	33.14776	-115.5803
2591033	2 P	TG	TG	Imperial	TP	18 FMRP	7 12S	14E	33.14731	-115.5451
2591034	2 P	TG	TG	Imperial	TP	19 FMRP	9 12S	14E	33.13993	-115.5214
2591035	2 P	TG	TG	Imperial	TP	20 FMRP	14 12S	13E	33.12586	-115.5803
2591036	2 P	TG	TG	Imperial	TP	21 FMRP	17 12S	13E	33.1188	-115.6399
2591037	2 P	TG	TG	Imperial	TP	22 FMRP	18 12S	13E	33.11897	-115.6654
2591038	2 P	TG	TG	Imperial	TP	23 FMRP	18 12S	14E	33.11879	-115.5453
2591039	2 P	TG	TG	Imperial	TP	24 FMRP	17 12S	14E	33.11872	-115.5307
2591075	2 P	TG	TG	Imperial	C	175 CHEVU	13 13S	13E	33.01617	-115.5779
2591076	2 P	TG	TG	Imperial	C	176 CHEVU	15 13S	13E	33.01949	-115.6163
2591077	2 P	TG	TG	Imperial	C	177 CHEVU	14 13S	13E	33.01616	-115.5959
2591078	2 P	TG	TG	Imperial	C	178 CHEVU	11 13S	13E	33.03067	-115.5958
2591079	2 P	TG	TG	Imperial	C	179 CHEVU	12 13S	13E	33.03066	-115.5779
2591080	2 P	TG	TG	Imperial	C	180 CHEVU	6 13S	14E	33.04437	-115.561
2591081	2 P	TG	TG	Imperial	C	181 CHEVU	2 13S	13E	33.05254	-115.5953
2591096	2 B	INJ	INJ	Imperial	River Ranch	16 CALOC	25 11S	13E	33.17711	-115.563
2591097	2 A	DWT	DWT	Imperial	River Ranch	9 CALOC	25 11S	13E	33.18346	-115.5775
2591104	2 A	OBS	OBS	Imperial	River Ranch	17 CALOC	25 11S	13E	33.1833	-115.5716
2591152	2 A	OBS	OBS	Imperial	SIM	1 CALOC	30 11S	14E	33.18341	-115.5454
2591153	2 A	OBS	OBS	Imperial	ENG	1 CALOC	5 12S	14E	33.14865	-115.5439
2591167	2 P	OBS	OBS	Imperial	HATU	1 CALOC	11 12S	13E	33.1404	-115.5884
2591169	2 A	OBS	OBS	Imperial	ALO	1 CALOC	26 11S	13E	33.18076	-115.5816
2591170	2 A	INJ	INJ	Imperial	ALO	4 CALOC	5 12S	13E	33.16016	-115.6475
2591171	2 P	DWT	DWT	Imperial	Elmore	100 CALOC	5 12S	13E	33.15514	-115.644
2591177	2 P	INJ	INJ	Imperial	IID	30 CALOC	5 12S	13E	33.1617	-115.6405
2591178	2 P	OBS	OBS	Imperial	Sinclair	30 UOC-S	4 12S	13E	33.15429	-115.6225
2591188	2 P	OBS	OBS	Imperial	IID	14 UOC-S	22 11S	13E	33.19751	-115.6127
2591189	2 A	OBS	OBS	Imperial	IID	8 CALOC	32 11S	13E	33.17331	-115.6395
2591191	2 A	INJ	INJ	Imperial	River Ranch	13 CALOC	25 11S	13E	33.17978	-115.5638
2591193	2 A	DWT	DWT	Imperial	M 6B	CALOC	33 11S	13E	33.1625	-115.6237
2591194	2 A	DWT	DWT	Imperial	River Ranch	14 CALOC	25 11S	13E	33.18305	-115.579
2591204	2 P	DWT	DWT	Imperial	Del Ranch	9 CALOC	4 12S	13E	33.15566	-115.615
2591205	2 A	DWT	DWT	Imperial	Elmore	15 CALOC	26 11S	13E	33.18351	-115.5959
2591206	2 A	CLT	CLT	Imperial	Ray	1 FPART	12 11S	14E	33.23004	-115.4668
2591207	2 A	OBS	OBS	Imperial	PR	1 CALOC	4 12S	13E	33.15586	-115.6149
2591227	2 I	INJ	INJ	Imperial	IW	8 CALOC	34 11S	13E	33.17609	-115.6064
2591234	2 A	OBS	OBS	Imperial	PR	2 CALOC	33 11S	13E	33.16273	-115.6225

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2591236	2 A	INJ	INJ	Imperial	Sinclair	24 CALOC	SNSEA	5 12S	13E	33.14802	-115.6386
2591239	2 A	DWT	DWT	Imperial	Vonderahe	3 CALOC	SNSEA	5 12S	13E	33.16145	-115.6401
2591240	2 A	DWT	DWT	Imperial	IID	16 CALOC	SNSEA	5 12S	13E	33.16084	-115.6405
2591247	2 A	INJ	INJ	Imperial	Sinclair	26 CALOC	SNSEA	5 12S	13E	33.14809	-115.6326
2591248	2 A	INJ	INJ	Imperial	Sinclair	27 CALOC	SNSEA	5 12S	13E	33.14814	-115.6323
2591249	2 A	CLT	CLT	Imperial	Ray	2 FPART		12 11S	14E	33.23084	-115.4708
2591250	2 A	CLT	CLT	Imperial	Ray	3 FPART		12 11S	14E	33.22784	-115.4678
2591251	2 A	DWT	DWT	Imperial	Sinclair	11 CALOC	SNSEA	5 12S	13E	33.15419	-115.6359
2591252	2 A	DWT	DWT	Imperial	Vonderahe	2 CALOC	SNSEA	5 12S	13E	33.15435	-115.6353
2591253	2 A	INJ	INJ	Imperial	Elmore	101 CALOC	SNSEA	5 12S	13E	33.14847	-115.6481
2591254	2 A	DWT	DWT	Imperial	Elmore	16 CALOC	SNSEA	26 11S	13E	33.18367	-115.5965
2591256	2 A	INJ	INJ	Imperial	IID	17 CALOC	SNSEA	5 12S	13E	33.14869	-115.6481
2591257	2 A	DWT	DWT	Imperial	River Ranch	18 CALOC	SNSEA	25 11S	13E	33.18359	-115.5795
2591258	2 A	DWT	DWT	Imperial	Del Ranch	10 CALOC	SNSEA	33 11S	13E	33.16234	-115.6211
2591259	2 A	INJ	INJ	Imperial	Smith IW	1 CALOC	SNSEA	34 11S	13E	33.16637	-115.5977
2591261	2 A	DWT	DWT	Imperial	Del Ranch	11 CALOC	SNSEA	33 11S	13E	33.16365	-115.6224
2591262	2 A	OBS	OBS	Imperial	VR	1 CALOC	SNSEA	33 11S	13E	33.16349	-115.6248
2591263	2 A	INJ	INJ	Imperial	Smith IW	2 CALOC	SNSEA	34 11S	13E	33.16662	-115.5978
2591264	2 A	DWT	DWT	Imperial	Del Ranch	12 CALOC	SNSEA	33 11S	13E	33.16245	-115.6177
2591267	2 A	DWT	DWT	Imperial	Vonderahe	4 CALOC	SNSEA	5 12S	13E	33.15439	-115.6323
2591268	2 A	OBS	OBS	Imperial	M	17 CALOC	SNSEA	33 11S	13E	33.16299	-115.6154
2591269	2 B	INJ	INJ	Imperial	River Ranch	2 CALOC	SNSEA	25 11S	13E	33.18322	-115.5636
2591442	2 A	INJ	INJ	Imperial		28-9 ORN18	BRWLY	9 13S	14E	33.02924	-115.5347
2591443	2 B	INJ	INJ	Imperial		73-16 ORN18	BRWLY	16 13S	14E	33.02416	-115.5256
2591444	2 A	DWT	DWT	Imperial	Hudson Ranch	13-1 HDSON	SNSEA	13 11S	13E	33.20648	-115.5771
2591445	2 B	INJ	INJ	Imperial		78-9 ORN18	BRWLY	9 13S	14E	33.02918	-115.524
2591446	2 B	INJ	INJ	Imperial		28A-9 ORN18	BRWLY	9 13S	14E	33.02937	-115.5348
2591447	2 I	DWT	DWT	Imperial		54-16 ORN18	BRWLY	16 13S	14E	33.0221	-115.5287
2591448	2 A	DWT	DWT	Imperial	Hudson Ranch	13-3 HDSON	SNSEA	13 11S	13E	33.2065	-115.5766
2591449	2 B	INJ	INJ	Imperial		28B-9 ORN18	BRWLY	9 13S	14E	33.02929	-115.5347
2591450	2 B	INJ	INJ	Imperial		58-17 ORN18	BRWLY	17 13S	14E	33.01491	-115.5468
2591451	2 A	DWT	DWT	Imperial	Del Ranch	14 CALOC	SNSEA	33 11S	13E	33.16362	-115.6208
2591452	2 I	DWT	DWT	Imperial		56-16 ORN18	BRWLY	16 13S	14E	33.01859	-115.5274
2591453	2 I	DWT	DWT	Imperial		61-16 ORN18	BRWLY	16 13S	14E	33.02621	-115.5277
2591454	2 B	INJ	INJ	Imperial		58A-17 ORN18	BRWLY	17 13S	14E	33.0149	-115.5467
2591458	2 I	DWT	DWT	Imperial		25-16 ORN18	BRWLY	16 13S	14E	33.0197	-115.5361
2591462	2 B	INJ	INJ	Imperial		62-15 ORN18	BRWLY	15 13S	14E	33.02584	-115.5085
2591467	2 A	INJ	INJ	Imperial		58B-17 ORN18	BRWLY	17 13S	14E	33.01482	-115.5467
2591470	2 A	INJ	INJ	Imperial		86-17 ORN18	BRWLY	17 13S	14E	33.01854	-115.5403
2591471	2 I	DWT	DWT	Imperial		24-16 ORN18	BRWLY	16 13S	14E	33.02229	-115.5348
2591479	2 A	INJ	INJ	Imperial		25A-16 ORN18	BRWLY	16 13S	14E	33.01951	-115.5363
2591483	2 B	INJ	INJ	Imperial		24A-16 ORN18	BRWLY	16 13S	14E	33.02247	-115.5345
2591484	2 B	INJ	INJ	Imperial		22-16 ORN18	BRWLY	16 13S	14E	33.02571	-115.5348
2591485	2 A	INJ	INJ	Imperial	Del Ranch Inj	8 CALOC	SNSEA	34 11S	13E	33.17003	-115.6061
2591486	2 B	INJ	INJ	Imperial		62A-15 ORN18	BRWLY	15 13S	14E	33.0259	-115.5086
2591491	2 P	EWT	EWT	Imperial		45653 ORN21		27 10S	14E	33.27411	-115.5094
2591492	2 A	DWT	DWT	Imperial		13-2 HDSON	SNSEA	13 11S	13E	33.2064	-115.5707
2591493	2 A	INJ	INJ	Imperial	IW-1	HDSON	SNSEA	13 11S	13E	33.2118	-115.5631
2591494	2 A	INJ	INJ	Imperial	IW-2	HDSON	SNSEA	13 11S	13E	33.21181	-115.5634
2591495	2 A	INJ	INJ	Imperial	IW-3	HDSON	SNSEA	13 11S	13E	33.2118	-115.5637
2591496	2 A	INJ	INJ	Imperial	IW-4	HDSON	SNSEA	13 11S	13E	33.2065	-115.5769

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2591500	2 I	EWT	Imperial	85-20	ORN21	20 10S	14E	33.28431	-115.5296
2591501	2 I	DWT	Imperial		501 GEOGE	19 11S	14E	33.20239	-115.5586
2591502	2 I	DWT	Imperial		502 GEOGE	19 11S	14E	33.20211	-115.5586
2591508	2 I	INU	Imperial		508 GEOGE	19 11S	14E	33.20486	-115.5455
2591510	2 A	INU	Imperial		18 CALOC	4 12S	13E	33.15599	-115.6147
2591513	2 A	DWT	Imperial		MagMaMax	5 12S	13E	33.16109	-115.6414
2591514	2 A	INU	Imperial		Vonderahe	34 11S	13E	33.16871	-115.6066
2591515	2 A	INU	Imperial		Del Ranch Inj	25 11S	13E	33.17899	-115.5643
2591516	2 A	INU	Imperial		River Ranch	34 11S	13E	33.1629	-115.6065
2591518	2 A	DWT	Imperial		MagMaMax	5 12S	13E	33.15833	-115.6372
2591519	2 A	INU	Imperial		Vonderahe	13 11S	13E	33.21213	-115.5636
2591522	2 A	DWT	Imperial		IW-5	33 11S	13E	33.16876	-115.6219
2591523	2 A	INU	Imperial		Del Ranch	25 11S	13E	33.18273	-115.5654
2591525	2 I	EWT	Imperial		River Ranch	11 11S	13E	33.22819	-115.5803
2591526	2 I	EWT	Imperial		45292 HELKG	11 11S	13E	33.22798	-115.5803
2591529	2 A	DWT	Imperial		45293 HELKG	5 12S	13E	33.15852	-115.6371
2591530	2 A	DWT	Imperial		1 CALOC	13 11S	13E	33.2123	-115.5761
2591531	2 N	DWT	Imperial		13-4	33 11S	13E	33.16647	-115.6309
2591532	2 N	DWT	Imperial		Black Rock	33 11S	13E	33.16688	-115.6308
2591533	2 N	DWT	Imperial		Black Rock	23 11S	13E	33.20142	-115.5869
2591534	2 N	DWT	Imperial		Morton Bay	23 11S	13E	33.20183	-115.5869
2591535	2 N	DWT	Imperial		Morton Bay	27 11S	13E	33.18277	-115.5997
2591536	2 N	DWT	Imperial		Red Hill	27 11S	13E	33.18276	-115.5992
2591537	2 N	DWT	Imperial		Red Hill	33 11S	13E	33.16909	-115.6278
2591538	2 N	DWT	Imperial		Black Rock	33 11S	13E	33.16909	-115.627
2591539	2 N	DWT	Imperial		Black Rock	33 11S	13E	33.16909	-115.627
2591540	2 N	DWT	Imperial		Black Rock	33 11S	13E	33.16247	-115.631
2591541	2 N	DWT	Imperial		Black Rock	27 11S	13E	33.18896	-115.598
2591542	2 N	DWT	Imperial		Red Hill	27 11S	13E	33.18958	-115.598
2591543	2 N	DWT	Imperial		Red Hill	27 11S	13E	33.18977	-115.6062
2591544	2 N	DWT	Imperial		Red Hill	27 11S	13E	33.18315	-115.6069
2591545	2 N	DWT	Imperial		Red Hill	22 11S	13E	33.1933	-115.5979
2591547	2 N	INU	Imperial		Red Hill	22 11S	13E	33.19392	-115.5979
2591548	2 N	INU	Imperial		Red Hill Inj	35 11S	13E	33.16878	-115.5808
2591549	2 N	INU	Imperial		Red Hill Inj	35 11S	13E	33.16816	-115.5808
2591550	2 N	INU	Imperial		Red Hill Inj	35 11S	13E	33.16876	-115.5894
2591551	2 N	INU	Imperial		Red Hill Inj	35 11S	13E	33.16814	-115.5894
2591552	2 N	INU	Imperial		Red Hill Inj	34 11S	13E	33.16519	-115.5981
2591553	2 N	INU	Imperial		Red Hill Inj	34 11S	13E	33.16457	-115.5981
2591554	2 N	INU	Imperial		Red Hill Inj	3 12S	13E	33.1617	-115.5981
					Red Hill Inj	3 12S	13E	33.16109	-115.5981

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Attachment No. 2 - Geothermal Wells within a 2-mile radius of the proposed site													
API Number	Well Status	Well Type	Well Symbol	County Name	Lease Name	Well Number	Operator/Co	Field Name	TownshipSe	Township	Range	Lat83	Long83
2590379 P	TG	TG		Imperial	C		308 CHEVU			13 12S	13E	33.13239	-115.5787
2590155 P	TG	TG		Imperial	Salton Sea		2 REPUB			11 12S	13E	33.13332	-115.5804
2591167 P	OBS	OBS		Imperial	HATU		1 CALOC			11 12S	13E	33.1404	-115.5884
2590154 P	TG	TG		Imperial	Salton Sea		1 REPUB			11 12S	13E	33.14712	-115.5881
2591033 P	TG	TG		Imperial	TP		18 FMRP			7 12S	14E	33.14731	-115.5451
2591032 P	TG	TG		Imperial	TP		17 FMRP			2 12S	13E	33.14776	-115.5803
2590274 P	TG	TG		Imperial	Brandt		10 UREC			6 12S	14E	33.14791	-115.5571
2590464 P	TG	TG		Imperial		81-18	UOC-S			2 12S	13E	33.14808	-115.5882
2591153 A	OBS	OBS		Imperial	ENG		1 CALOC	SNSEA		5 12S	14E	33.14865	-115.5439
2590577 P	TG	TG		Imperial	Calipatria		2 LAHON			6 12S	14E	33.15478	-115.5452
2591554 N	INJ	INJ		Imperial	Red Hill Inj		29 CALOC	SNSEA		3 12S	13E	33.16109	-115.5981
2591553 N	INJ	INJ		Imperial	Red Hill Inj		28 CALOC	SNSEA		3 12S	13E	33.1617	-115.5981
2591552 N	INJ	INJ		Imperial	Red Hill Inj		26 CALOC	SNSEA		34 11S	13E	33.16457	-115.5981
2591551 N	INJ	INJ		Imperial	Red Hill Inj		25 CALOC	SNSEA		34 11S	13E	33.16519	-115.5981
2591259 A	INJ	INJ		Imperial	Smith IW		1 CALOC	SNSEA		34 11S	13E	33.16637	-115.5977
2591263 A	INJ	INJ		Imperial	Smith IW		2 CALOC	SNSEA		34 11S	13E	33.16662	-115.5978
2591550 N	INJ	INJ		Imperial	Red Hill Inj		24 CALOC	SNSEA		35 11S	13E	33.16814	-115.5894
2591548 N	INJ	INJ		Imperial	Red Hill Inj		22 CALOC	SNSEA		35 11S	13E	33.16816	-115.5808
2591549 N	INJ	INJ		Imperial	Red Hill Inj		23 CALOC	SNSEA		35 11S	13E	33.16876	-115.5894
2591547 N	INJ	INJ		Imperial	Red Hill Inj		21 CALOC	SNSEA		35 11S	13E	33.16878	-115.5808
2590272 P	TG	TG		Imperial	Brandt		6 UREC			31 11S	14E	33.16877	-115.5597
2590596 P	EWT	EWT		Imperial	Salton Sea		1 CALOC	SNSEA		36 11S	13E	33.16888	-115.5648
2590351 P	OBS	OBS		Imperial	Barretta		1 CALOC	SNSEA		34 11S	13E	33.16977	-115.5979
2591027 P	TG	TG		Imperial	TP		12 FMRP			34 11S	13E	33.16978	-115.5976
2591028 P	TG	TG		Imperial	TP		13 FMRP			36 11S	13E	33.16968	-115.5719
2590653 A	OBS	OBS		Imperial	HAT		3 CALOC	SNSEA		35 11S	13E	33.16984	-115.588
2590708 B	INJ	INJ		Imperial	J.J. Elmore IW		3 CALOC	SNSEA		34 11S	13E	33.17059	-115.5978
2590710 A	INJ	INJ		Imperial	J.J. Elmore IW		5 CALOC	SNSEA		34 11S	13E	33.17296	-115.5978
2591096 B	INJ	INJ		Imperial	River Ranch		16 CALOC	SNSEA		25 11S	13E	33.17711	-115.563
2590886 A	INJ	INJ		Imperial	River Ranch		5 CALOC	SNSEA		25 11S	13E	33.17717	-115.565
2590885 B	INJ	INJ		Imperial	River Ranch		4 CALOC	SNSEA		25 11S	13E	33.17719	-115.5655
2591515 A	INJ	INJ		Imperial	River Ranch		19 CALOC	SNSEA		25 11S	13E	33.17899	-115.5643
2591191 A	INJ	INJ		Imperial	River Ranch		13 CALOC	SNSEA		25 11S	13E	33.17978	-115.5638
2590889 A	INJ	INJ		Imperial	River Ranch		6 CALOC	SNSEA		25 11S	13E	33.17979	-115.5631
2590702 P	DWT	DWT		Imperial	J.J. Elmore		6 CALOC	SNSEA		26 11S	13E	33.18065	-115.5878
2591169 A	OBS	OBS		Imperial	ALO		1 CALOC	SNSEA		26 11S	13E	33.18076	-115.5816
2590658 P	DWT	DWT		Imperial	Elmore		4 CALOC	SNSEA		26 11S	13E	33.1809	-115.5877
2591523 A	INJ	INJ		Imperial	River Ranch		20 CALOC	SNSEA		25 11S	13E	33.18273	-115.5654
2591194 A	DWT	DWT		Imperial	River Ranch		14 CALOC	SNSEA		25 11S	13E	33.18305	-115.579
2590876 I	DWT	DWT		Imperial	River Ranch		12 CALOC	SNSEA		25 11S	13E	33.18308	-115.5754
2590030 P	EWT	EWT		Imperial	Grace		1 VANHG			19 12S	13E	33.18306	-115.5702
2590863 A	DWT	DWT		Imperial	River Ranch		8 CALOC	SNSEA		25 11S	13E	33.18315	-115.5785
2590854 A	OBS	OBS		Imperial	River Ranch		7 CALOC	SNSEA		25 11S	13E	33.1833	-115.5789
2591269 B	INJ	INJ		Imperial	River Ranch		2 CALOC	SNSEA		25 11S	13E	33.18322	-115.5636
2591104 A	OBS	OBS		Imperial	River Ranch		17 CALOC	SNSEA		25 11S	13E	33.1833	-115.5716
2590890 A	DWT	DWT		Imperial	River Ranch		11 CALOC	SNSEA		25 11S	13E	33.18339	-115.5764
2590665 A	INJ	INJ		Imperial	River Ranch		3 CALOC	SNSEA		25 11S	13E	33.18333	-115.563
2591097 A	DWT	DWT		Imperial	River Ranch		9 CALOC	SNSEA		25 11S	13E	33.18346	-115.5775
2591257 A	DWT	DWT		Imperial	River Ranch		18 CALOC	SNSEA		25 11S	13E	33.18359	-115.5795



Attachment No.4 - Groundwater Ambient Monitoring and Assessment (GAMA) wells within 10 mile radius of the proposed site

GM_DATASET_NAME	GM_WELL_CATEGORY	GM_WELL_ID	GM_LATITUDE	GM_LONGITUDE	GM_TOP_DEPTH_OF_SCREEN_FT	GM_BOTTOM_DEPTH_OF_SCREEN_FT	SRC_DATUM	SRC_WELL_CATEGORY
WB_CLEANUP	MONITORING	T10000012310-MW-10	33.0369307	-115.6144893	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-9	33.037056	-115.6143383	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-11	33.0370811	-115.6146235	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-1	33.0371137	-115.6144982	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-4	33.0371452	-115.6144014	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-2	33.0371779	-115.6145969	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-3	33.037207	-115.6144997	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-12	33.0372129	-115.6142718	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-7	33.0372278	-115.6143753	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-8	33.0372289	-115.614188	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-5	33.0372511	-115.6146375	4	14	NAD83	MW
WB_CLEANUP	MONITORING	T10000012310-MW-6	33.0372538	-115.6144827	4	14	NAD83	MW
USGS_NWIS	MONITORING	USGS-330214115195701	33.0372648	-115.499987			NAD83	OBSERVATION
DWR	WATER SUPPLY, OTHER	13S15E05D001S	33.0552	-115.4502				
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330330115265202	33.05837488	-115.448596			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330550115404001	33.0972662	-115.6786056			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330550115404002	33.0972662	-115.6786056			NAD83	UNKNOWN
DWR	WATER SUPPLY, OTHER	12S12E25F002S	33.101	-115.6696				
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330639115303801	33.11087387	-115.511376			NAD83	UNKNOWN
DWR	WATER SUPPLY, OTHER	12S14E21J001S	33.1121	-115.5024				
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330732115361901	33.12559718	-115.6061021			NAD83	UNKNOWN
WB_CLEANUP	MONITORING	T10000011602-MW-3	33.1252268	-115.513925			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-2	33.1253695	-115.5140154			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-4	33.125469	-115.5142214			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-5	33.1255387	-115.5140483			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-1	33.1255903	-115.5138303			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-6	33.125734	-115.5138763			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-7	33.1257343	-115.5135102			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-9	33.1258167	-115.5145807			NAD83	MW
WB_CLEANUP	MONITORING	T10000011602-MW-8	33.1259988	-115.5141178			NAD83	MW
DWR	WATER SUPPLY, OTHER	12S13E15J001S	33.1267	-115.5992				
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330734115284001	33.1261508	-115.4785969			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330849115364501	33.14698538	-115.6133244			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330855115371701	33.1486521	-115.6222136			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330917115385101	33.15476337	-115.6483257			NAD83	UNKNOWN
DWR	WATER SUPPLY, OTHER	12S15E04K001S	33.1579	-115.4032				
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330943115385201	33.1619853	-115.6486034			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330945115370701	33.16254043	-115.6194356			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330945115365201	33.16254038	-115.6152687			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-330942115242301	33.16170465	-115.4072055			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331127115331601	33.1908719	-115.5526661			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331127115331602	33.1908719	-115.5526661			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331127115331603	33.1908719	-115.5526661			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331127115331604	33.1908719	-115.5526661			NAD83	UNKNOWN
USGS_NWIS	MONITORING	USGS-331128115334401	33.19114977	-115.5630442			NAD83	OBSERVATION
USGS_NWIS	MONITORING	USGS-331128115334402	33.19114977	-115.5630442			NAD83	OBSERVATION
USGS_NWIS	MONITORING	USGS-331128115334403	33.19114977	-115.5630442			NAD83	OBSERVATION
USGS_NWIS	MONITORING	USGS-331128115334404	33.19114977	-115.5630442			NAD83	OBSERVATION
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331130115351701	33.1917056	-115.5888785			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331207115353001	33.20198307	-115.5924897			NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331209115344101	33.20253845	-115.578878			NAD83	UNKNOWN
DWR	WATER SUPPLY, OTHER	11S13E22H001S	33.2037	-115.5905				
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331219115351801	33.20531624	-115.5891562			NAD83	UNKNOWN

USGS_NWIS	WATER SUPPLY, OTHER	USGS-331226115255601	33.207259	-115.4330396	NAD83	UNKNOWN
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331226023	33.21226023	-115.5702665	NAD83	UNKNOWN
DWR	WATER SUPPLY, OTHER	11S13E13D0001S5	33.222	-115.5682		
DWR	WATER SUPPLY, OTHER	11S13E13D0002S	33.222	-115.5682		
USGS_NWIS	WATER SUPPLY, OTHER	USGS-331499115283801	33.24420274	-115.4780409	NAD83	UNKNOWN
DWR	WATER SUPPLY, OTHER	11S14E02A001S	33.2513	-115.4671		
WB_CLEANUP	MONITORING	L10004403391-N-MW-3	33.2712984	-115.4919196	68 NAD83	MW
WB_CLEANUP	MONITORING	L10004403391-N-MW-2	33.2728877	-115.4929844	64 NAD83	MW
WB_CLEANUP	MONITORING	L10004403391-N-MW-1	33.2762038	-115.4884781	50 NAD83	MW
DWR	WATER SUPPLY, OTHER	10S13E27B001S5	33.2807	-115.5948		

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# **Appendix B**

## **Geologic and Geotechnical Hazard Report**

# Geologic and Geotechnical Hazard Report

## Global Lithium Energy Salton Sea Lithium Project

**APN 020-120-025**

Calipatria, California

---

Prepared for:

### DuBose Design Group

1065 State Street

El Centro, CA 92243



Prepared by:

**Landmark Consultants, Inc.**

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El Centro, CA 92243

(760) 370-3000

**March 2024**

**EEC ORIGINAL PKG**



March 29, 2024

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**Geological and Geotechnical Hazard Evaluation  
Global Lithium Energy Salton Sea Lithium Project  
Kalin Road south of Sinclair Road  
Calipatria, California  
*LCI Project No. LE24043***

Dear Mr. DuBose:

This geologic and environmental hazards evaluation is provided for the proposed Global Lithium Energy Salton Sea Lithium project located on Kalin Road approximately 1 mile south of Sinclair Road northwest of Calipatria, California.

**Site Description**

The project site (APN 020-120-025) consists of approximately 320 acres of agricultural use land divided into four 80-acre fields. The project site is bounded on the east by Dewey Road and the west by Hatfield Road, both of which are unpaved county roads. Kalin Road, a paved county road, crosses north-south through the middle of the project site. Dirt field roads and concrete lined irrigation ditches form the northern and southern property boundaries. Agricultural fields surround the project site. The Alamo River is located east of the project site beyond which is the Brandt Cattle feed lot. The project site is roughly flat lying ranging in elevation from 210 to 215 feet below mean sea level (MSL).

**Site Geological Conditions**

**Site Geology:** The project site is located in the Imperial Valley portion of the Salton Trough physiographic province. The Salton Trough is a topographic and geologic structural depression resulting from large scale regional faulting. The trough is bounded on the northeast by the San Andreas Fault and Chocolate Mountains and the southwest by the Peninsular Range and faults of the San Jacinto Fault Zone. The Salton Trough represents the northward extension of the Gulf of California, containing both marine and non-marine sediments since the Miocene Epoch.

**EEC ORIGINAL PKG**



Tectonic activity that formed the trough continues at a high rate as evidenced by deformed young sedimentary deposits and high levels of seismicity. Figure 1 shows the location of the site in relation to regional faults and physiographic features.

The Imperial Valley is directly underlain by lacustrine deposits, which consist of interbedded lenticular and tabular silt, sand, and clay. The Late Pleistocene to Holocene lake deposits are probably less than 100 feet thick and derived from periodic flooding of the Colorado River which intermittently formed a fresh water lake (Lake Cahuilla).

Older deposits consist of Miocene to Pleistocene non-marine and marine sediments deposited during intrusions of the Gulf of California. Basement rock consisting of Mesozoic granite and Paleozoic metamorphic rocks are estimated to exist at depths between 15,000 - 20,000 feet. Based on Unified Soil Classification System, the permeability of these soils is expected to be low to very low.

**Near Surface Site Soils:** The USDA Natural Resources Conservation Service “Web Soil Survey” (USDA, 2024) website indicates that surficial deposits at the project site consist predominantly of silty clay of the Holtville, Imperial, and Imperial-Glenbar soil groups (see Plate A-3). These loams are formed in sediment and alluvium of mixed origin (Colorado River overflows and fresh-water lake-bed sediments).

Based on previous geotechnical investigations conducted by Landmark Consultants in the area of the project site, the subsurface soils generally consist of interbedded sands, silts and clays of varying thicknesses to a depth of 50 feet. The site soils would typically be classified as Site Class D or E soils.

**Groundwater:** The groundwater in the site area is brackish and typically encountered at a depth of between 6 to 8 feet below ground surface in the vicinity of the project site. The groundwater level noted should not be interpreted to represent an accurate or permanent condition.

### **Geological Hazards**

**Groundshaking:** The project site is located in the seismically active Imperial Valley of southern California with numerous mapped faults of the San Andreas Fault System traversing the region. The San Andreas Fault System is comprised of the San Andreas, San Jacinto, and Elsinore Fault Zones in southern California.

The Imperial fault represents a transition from the more continuous San Andreas fault to a more nearly echelon pattern characteristic of the faults under the Gulf of California.

2022 CBC General Ground Motion Parameters: The California Building Code (CBC) requires that a site-specific ground motion hazard analysis be performed in accordance with ASCE 7-16 Section 11.4.8 (ASCE, 2016) for structures on Site Class D with  $S_1$  greater than or equal to 0.2 and Site Class E sites with  $S_s$  greater than or equal to 1.0 (CBC, 2023). **This project site would typically be classified as either Site Class D or E, which would require a site-specific ground motion hazard analysis.** However, ASCE 7-16 Section 11.4.8 Supplement 3 provides exceptions which permit the use of conservative values of design parameters for certain conditions for Site Class D and E sites in lieu of a site-specific hazard analysis.

The 2022 CBC general ground motion parameters are based on the Risk-Targeted Maximum Considered Earthquake ( $MCE_R$ ). The Structural Engineers Association of California (SEAOC) and Office of Statewide Health Planning and Development (OSHPD) Seismic Design Maps Web Application (SEAOC, 2024) was used to obtain the site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters. Design spectral response acceleration parameters are defined as the earthquake ground motions that are two-thirds (2/3) of the corresponding  $MCE_R$  ground motions. The Maximum Considered Earthquake Geometric Mean ( $MCE_G$ ) peak ground acceleration adjusted for soil site class effects ( $PG_{AM}$ ) value to be used for liquefaction and seismic settlement analysis in accordance with 2022 CBC Section 1803.5.12.2 is estimated at 0.55g for Soil Site Class D and 0.60g for Soil Site Class E. Design earthquake ground motion parameters are provided in Table 2. ***Very strong ground shaking can occur at this site.***

**Faulting and Surface Rupture:** We have performed a computer-aided search of known faults or seismic zones that lie within a 42-mile radius of the project site (Table 1). A fault map illustrating known active faults relative to the site is presented on Figure 1, *Regional Fault Map*. Figure 2 shows the project site in relation to local faults. A fault map illustrating known active faults relative to the site is presented on Figure 1, *Regional Fault Map*. Figure 2 shows the project site in relation to local faults.

The criterion for fault classification adopted by the California Geological Survey defines Earthquake Fault Zones along Holocene-active or pre-Holocene faults (CGS, 2024b). Earthquake Fault Zones are regulatory zones that address the hazard of surface fault rupture.

A Holocene-active fault is one that has ruptured during Holocene time (within the last 11,700 years). A pre-Holocene fault is a fault that has not ruptured in the last 11,700 years. Pre-Holocene faults may still be capable of surface rupture in the future but are not regulated by the Alquist-Priolo Act (AP).

Review of the current Earthquake Fault Zone maps (CGS, 2024a) indicates that the nearest zoned faults are the Elmore Ranch fault located approximately 6.8 miles southwest of the project site, the Imperial fault located approximately 15.2 miles south of the project site and San Andreas fault located approximately 15.7 miles north of the project site. ***The project site does not lie within a currently mapped A-P Earthquake Fault Zone; therefore, surface fault rupture is considered to be low at the project site.***

The Kalin fault is located in the western portion of the project site. The Kalin fault was first mapped after a late August 2005 earthquake swarm in the vicinity of the project site with over seventeen (17) earthquakes of magnitude Mw3.3 to 5.1 (Lohman and McGuire, 2007). The epicenter of the Mw5.1 earthquake was approximately 2¾ miles west of the project site (CISN, 2024). Rymer, et.al., (2011) state that "the 2005 slip event resulted in a series of fault breaks about 170 m long that vertically offset a concrete-lined canal. Slip on the Kalin Fault manifests as nearly pure vertical slip. In 2005 the ground surface was freshly warped, if not also faulted, for a distance extending north-northeastward from the offset canal liner at least 800 m into an adjacent field of dense crops."

In April 2008, Rymer and others (2009) conducted high-resolution P- and S-wave seismic reflection and refraction data across the Kalin fault along the dirt field road on the north side of the project site west of Kalin Road. Rymer and others (2009) interpret a narrow (10- to 30-m-wide) zone of faulting that dips about 70 degrees to the northwest in the shallow subsurface (upper 200 m) and below 200 m depth the fault zone is nearly vertical and consists of at least four anastomosing strands.

**Liquefaction/Seismic Settlements:** Although the Imperial Valley has not yet been evaluated for seismic hazards by the California Geological Survey seismic hazards zonation program, liquefaction is well documented in the Imperial Valley after strong seismic events (McCrink, et al, 2011 and Rymer et al, 2011). Liquefaction is a potential design consideration because of possible saturated sandy substrata underlying the site. Liquefaction occurs when granular soil below the water table is subjected to vibratory motions, such as produced by earthquakes.

With strong ground shaking, an increase in pore water pressure develops as the soil tends to reduce in volume. If the increase in pore water pressure is sufficient to reduce the vertical effective stress (suspending the soil particles in water), the soil strength decreases and the soil behaves as a liquid (similar to quicksand). Liquefaction can produce excessive settlement, ground rupture, lateral spreading, or failure of shallow bearing foundations. Four conditions are generally required for liquefaction to occur:

- (1) the soil must be saturated (relatively shallow groundwater);
- (2) the soil must be loosely packed (low to medium relative density);
- (3) the soil must be relatively cohesionless (not clayey); and
- (4) groundshaking of sufficient intensity must occur to function as a trigger mechanism.

All of these conditions may exist to some degree at this site. Liquefaction evaluation studies made by Landmark in the vicinity of the project sites indicate a potential for up to 5 inches of liquefaction induced settlement within the project area. ***Liquefaction hazard potential at the project site is considered moderate to high.***

***Landsliding:*** No ancient landslides are shown on geologic maps of the vicinity and no indications of landslides were observed during our site investigation. The nearest sloped terrain is the Alamo River channel located approximately 150 feet east of the project site, the Vail 2 Drain that runs along the east side of Kalin Road and the Vail 2-A Drain that parallels the west margin of the project site. ***The hazard of landsliding is unlikely due to the relatively planar topography of the project site.***

***Volcanic hazards:*** The site is located in close proximity to the Salton Buttes which are considered volcanically active; therefore, ***the risk of volcanic hazards is considered moderate.*** Obsidian Butte and Red Hill, located at the south end of the Salton Sea approximately 2.5 miles northwest of the project site, are small remnants of volcanic domes. The domes erupted about 1,800 to 2,500 years ago (Wright et al, 2015). The subsurface brine fluids around the domes have a high heat flow and are currently being utilized to produce geothermal energy. The western half of the project site is located in the Salton Sea Known Geothermal Area. The closest geothermal wells (plugged and abandoned temperature gradient wells) are located approximately ½ mile south of the project site on Kalin and Hatfield Roads. The closest active geothermal wells (injection wells) are located approximately 3,300 feet northwest of the project site.

**Tsunamis and seiches:** Tsunamis are giant ocean waves created by strong underwater seismic events, asteroid impact, or large landslides. Seiches are large waves generated in enclosed bodies of water in response to strong ground shaking. The site is located approximately 3 miles southeast of the Salton Sea and the threat of tsunami or seiches is considered low.

**Flooding:** Based on our review of Federal Emergency Management Agency (FEMA) FIRM Panel 06025C0725C which encompasses the project site, the project site is located in Flood Zone A, an area to be within a special flood hazard area subject to inundation by the 1% annual chance flood (100-year flood) (FEMA, 2008). No base flood elevations have been determined. The County of Imperial has established -220 MSL as the minimum height for foundations of all structures unless protected from Salton Sea flood stage by a continuous berm with top elevation of -220 MSL. The project site lies at an elevation of -210 to -215 Elevation. However, a “Base Flood Elevation” study may be required for any structures placed on the project site since the site is located in Flood Zone A.

**Expansive soil:** In general, much of the near surface soils within the project site consist of silty clays and clays having a moderate to high expansion potential. The clay is expansive when wetted and can shrink with moisture loss (drying). Development of building foundations, concrete flatwork, and asphaltic concrete pavements should include provisions for mitigating potential swelling forces and reduction in soil strength, which can occur from saturation of the soil. ***Expansive soil mitigation (for foundations) will likely be required at this site.***

**Regional Subsidence:** Regional subsidence has been documented in the vicinity of the project site due to production and injection of geothermal fluids; therefore, ***the risk of regional subsidence is considered moderate.***

**Underground Carbon Dioxide Gas:** The site lies near a large reservoir of carbon dioxide gas as evidenced by open craters with bubbling gas and mud pot domes (Lynch and Hudnut, 2008) around the southeastern portion of the Salton Sea. Pockets of CO<sub>2</sub> gas have been encountered at shallow depths (between a depth of 50 and 100 feet below ground surface) in previous geotechnical exploration conducted in the vicinity of the existing geothermal power plants to the west and north of the project site. Svensen and others (2007) indicate that a sandstone CO<sub>2</sub> reservoir underlies the site at a depth of about 120 meters at the Davis-Schrimpf seep field approximately 2.5 miles north of the project site.

### Conclusion


This report was prepared according to the generally accepted *geotechnical engineering and geological standards of practice* that existed in Imperial County at the time the report was prepared. No express or implied warranties are made in connection with our services.

We appreciate the opportunity to provide our findings and professional opinions regarding geologic and environmental hazards at the site. If you have any questions or comments regarding our findings, please call our office at (760) 370-3000.


Respectfully Submitted,  
*Landmark Consultants, Inc.*

  
Peter E. LaBrucherie, PE  
Principal Engineer



  
Steven K. Williams, PG, CEG  
Senior Engineering Geologist



  
Jeffrey O. Lyon, PE  
Principal Engineer



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# **TABLES**

**EEC ORIGINAL PKG**

**Table 1**  
**Summary of Characteristics of Closest Known Active Faults**

Fault Name	Approximate Distance (miles)	Approximate Distance (km)	Maximum Moment Magnitude (Mw)	Fault Length (km)	Slip Rate (mm/yr)
Elmore Ranch	6.8	10.8	6.6	29 ± 3	1 ± 0.5
Imperial	15.2	24.3	7	62 ± 6	20 ± 5
Hot Springs *	15.5	24.8			
Brawley *	15.6	24.9			
San Andreas - Coachella	15.7	25.1	7.2	96 ± 10	25 ± 5
Superstition Hills	16.5	26.3	6.6	23 ± 2	4 ± 2
Superstition Mountain	19.6	31.4	6.6	24 ± 2	5 ± 3
San Jacinto - Borrego	25.6	40.9	6.6	29 ± 3	4 ± 2
Rico *	26.0	41.6			
Painted Gorge Wash*	27.2	43.6			
Route 247*	30.9	49.5			
Yuha Well *	31.1	49.7			
Shell Beds	31.6	50.5			
San Jacinto - Anza	32.0	51.2	7.2	91 ± 9	12 ± 6
Yuha*	32.8	52.5			
Vista de Anza*	32.9	52.6			
Northern Centinela*	33.4	53.4			
Laguna Salada	35.1	56.2	7	67 ± 7	3.5 ± 1.5
Ocotillo*	35.2	56.4			
Elsinore - Coyote Mountain	36.6	58.5	6.8	39 ± 4	4 ± 2
San Jacinto - Coyote Creek	37.5	60.0	6.8	41 ± 4	4 ± 2
Borrego (Mexico)*	41.8	66.9			

\* Note: Faults not included in CGS database.

**Table 2a**  
**2022 California Building Code (CBC) and ASCE 7-16 Seismic Parameters**

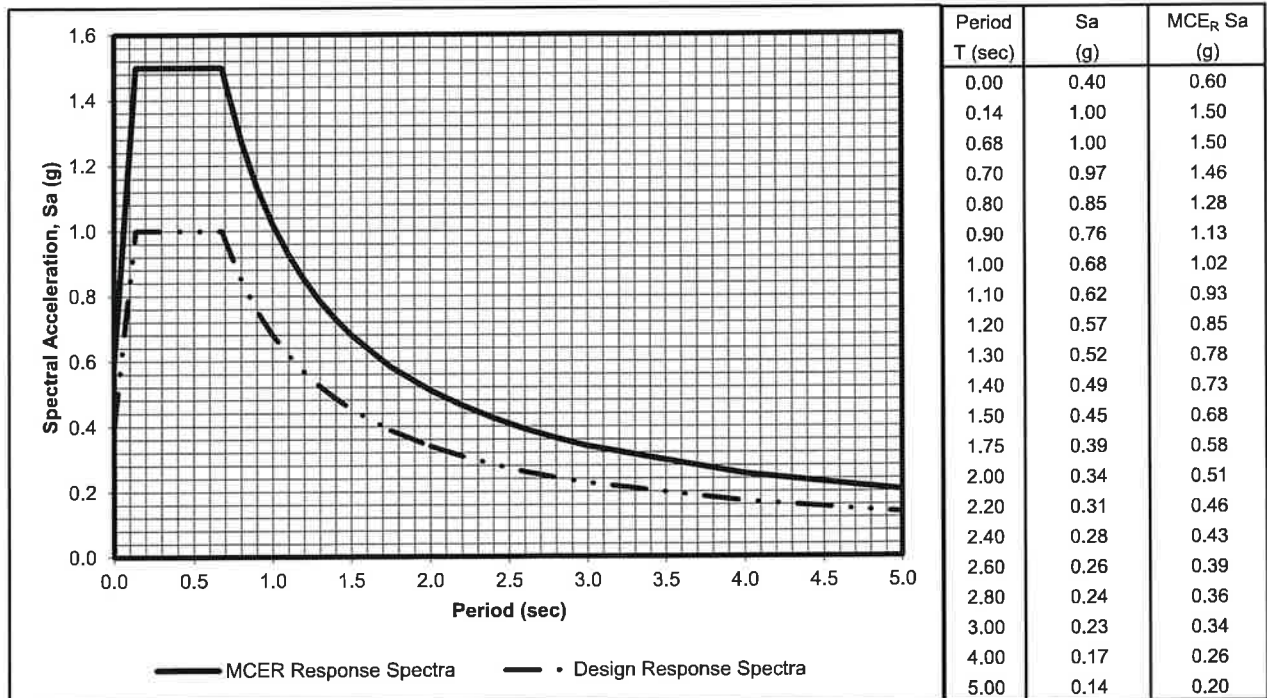
Soil Site Class:	<b>D</b>	<u>ASCE 7-16 Reference</u>
Latitude:	33.1586 N	Table 20.3-1
Longitude:	-115.5798 W	
Risk Category:	II	
Seismic Design Category:	D	

**Maximum Considered Earthquake (MCE) Ground Motion**

Mapped MCE <sub>R</sub> Short Period Spectral Response	<b>S<sub>s</sub></b>	1.500 g	ASCE Figure 22-1
Mapped MCE <sub>R</sub> 1 second Spectral Response	<b>S<sub>1</sub></b>	0.600 g	ASCE Figure 22-2
Short Period (0.2 s) Site Coefficient	<b>F<sub>a</sub></b>	1.00	ASCE Table 11.4-1
Long Period (1.0 s) Site Coefficient	<b>F<sub>v</sub></b>	1.70	ASCE Table 11.4-2
MCE <sub>R</sub> Spectral Response Acceleration Parameter (0.2 s)	<b>S<sub>MS</sub></b>	1.500 g	= F <sub>a</sub> * S <sub>s</sub> ASCE Equation 11.4-1
MCE <sub>R</sub> Spectral Response Acceleration Parameter (1.0 s)	<b>S<sub>M1</sub></b>	1.020 g	= F <sub>v</sub> * S <sub>1</sub> ASCE Equation 11.4-2

**Design Earthquake Ground Motion**

Design Spectral Response Acceleration Parameter (0.2 s)	<b>S<sub>DS</sub></b>	1.000 g	= 2/3*S <sub>MS</sub>	ASCE Equation 11.4-3
Design Spectral Response Acceleration Parameter (1.0 s)	<b>S<sub>D1</sub></b>	0.680 g	= 2/3*S <sub>M1</sub>	ASCE Equation 11.4-4
Risk Coefficient at Short Periods (less than 0.2 s)	<b>C<sub>RS</sub></b>	0.941		ASCE Figure 22-17
Risk Coefficient at Long Periods (greater than 1.0 s)	<b>C<sub>RI</sub></b>	0.913		ASCE Figure 22-18
	<b>T<sub>L</sub></b>	8.00 sec		ASCE Figure 22-12
	<b>T<sub>O</sub></b>	0.14 sec	= 0.2*S <sub>D1</sub> /S <sub>DS</sub>	
	<b>T<sub>S</sub></b>	0.68 sec	= S <sub>D1</sub> /S <sub>DS</sub>	
Peak Ground Acceleration	<b>PGA<sub>M</sub></b>	0.55 g		ASCE Equation 11.8-1



**Table 2b**  
**2022 California Building Code (CBC) and ASCE 7-16 Seismic Parameters**

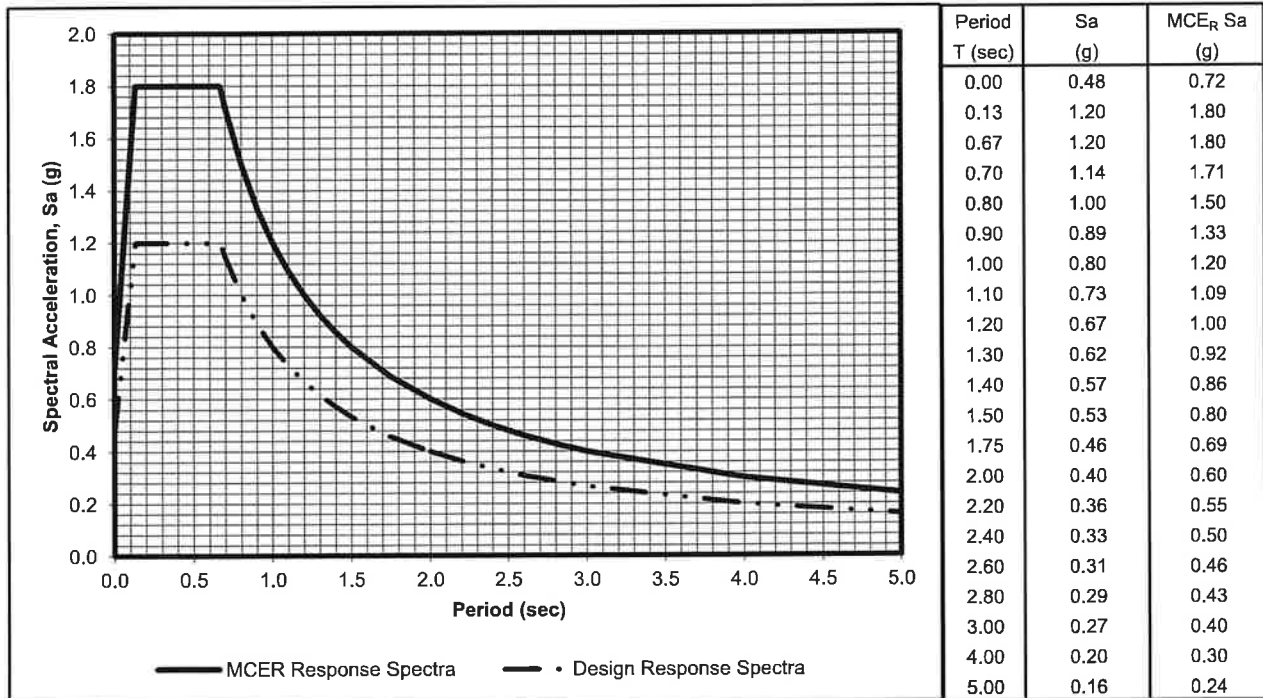
		<u>ASCE 7-16 Reference</u>
Soil Site Class:	E	Table 20.3-1
Latitude:	33.1586 N	
Longitude:	-115.5798 W	
Risk Category:	II	
Seismic Design Category:	D	

**Maximum Considered Earthquake (MCE) Ground Motion**

Mapped MCE <sub>R</sub> Short Period Spectral Response	S <sub>s</sub>	1.500 g	ASCE Figure 22-1
Mapped MCE <sub>R</sub> 1 second Spectral Response	S <sub>1</sub>	0.600 g	ASCE Figure 22-2
Short Period (0.2 s) Site Coefficient	F <sub>a</sub>	1.20	ASCE Table 11.4-1
Long Period (1.0 s) Site Coefficient	F <sub>v</sub>	2.00	ASCE Table 11.4-2
MCE <sub>R</sub> Spectral Response Acceleration Parameter (0.2 s)	S <sub>MS</sub>	1.800 g	= F <sub>a</sub> * S <sub>s</sub> ASCE Equation 11.4-1
MCE <sub>R</sub> Spectral Response Acceleration Parameter (1.0 s)	S <sub>M1</sub>	1.200 g	= F <sub>v</sub> * S <sub>1</sub> ASCE Equation 11.4-2

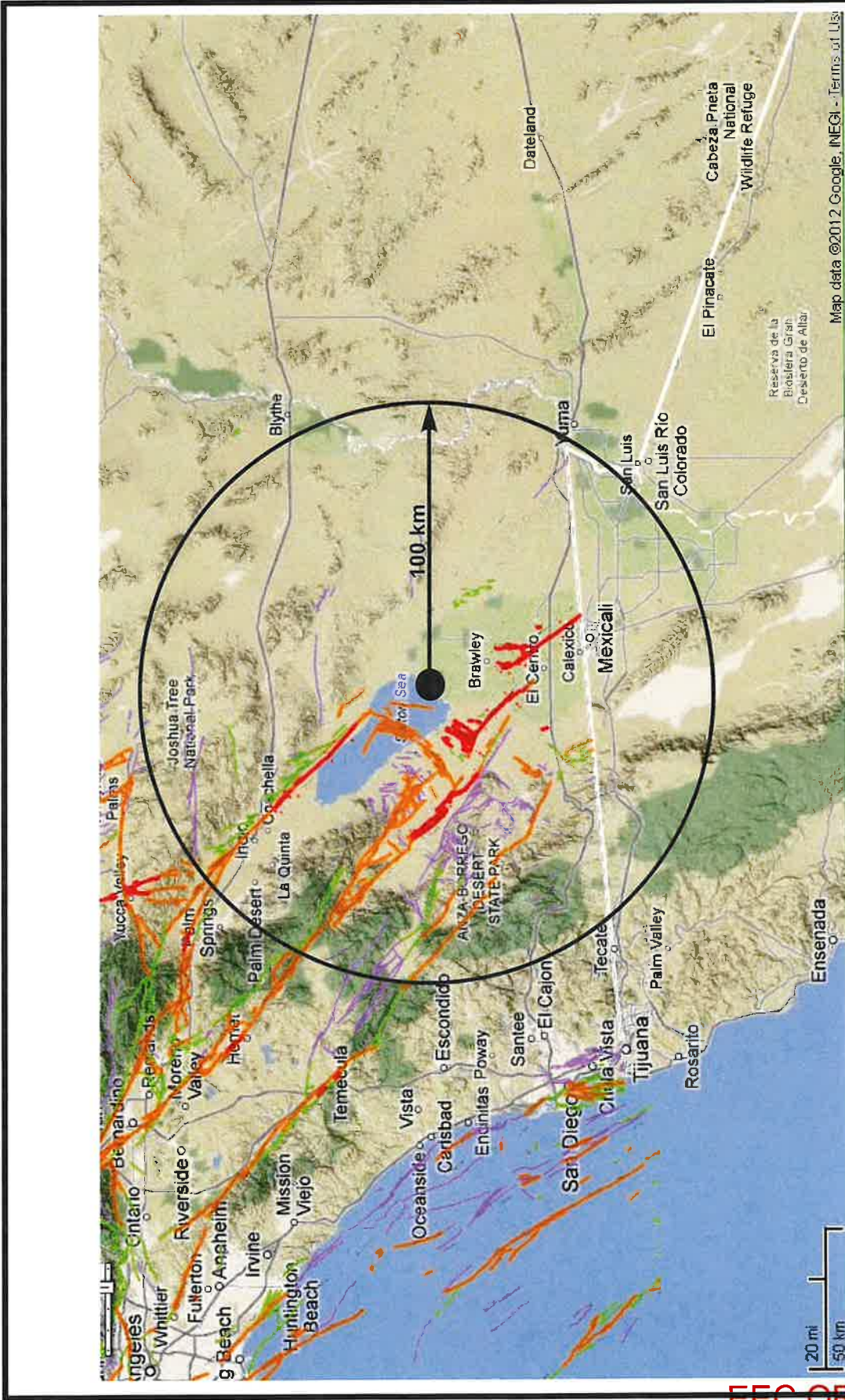
**Design Earthquake Ground Motion**

Design Spectral Response Acceleration Parameter (0.2 s)	S <sub>DS</sub>	1.200 g	= 2/3*S <sub>MS</sub>	ASCE Equation 11.4-3
Design Spectral Response Acceleration Parameter (1.0 s)	S <sub>D1</sub>	0.800 g	= 2/3*S <sub>M1</sub>	ASCE Equation 11.4-4
Risk Coefficient at Short Periods (less than 0.2 s)	C <sub>RS</sub>	0.941		ASCE Figure 22-17
Risk Coefficient at Long Periods (greater than 1.0 s)	C <sub>RI</sub>	0.913		ASCE Figure 22-18
	T <sub>L</sub>	8.00 sec		ASCE Figure 22-12
	T <sub>O</sub>	0.13 sec	= 0.2*S <sub>D1</sub> /S <sub>DS</sub>	
	T <sub>S</sub>	0.67 sec	= S <sub>D1</sub> /S <sub>DS</sub>	
Peak Ground Acceleration	PGA <sub>M</sub>	0.55 g		ASCE Equation 11.8-1



**FIGURES**

EEC ORIGINAL PKG



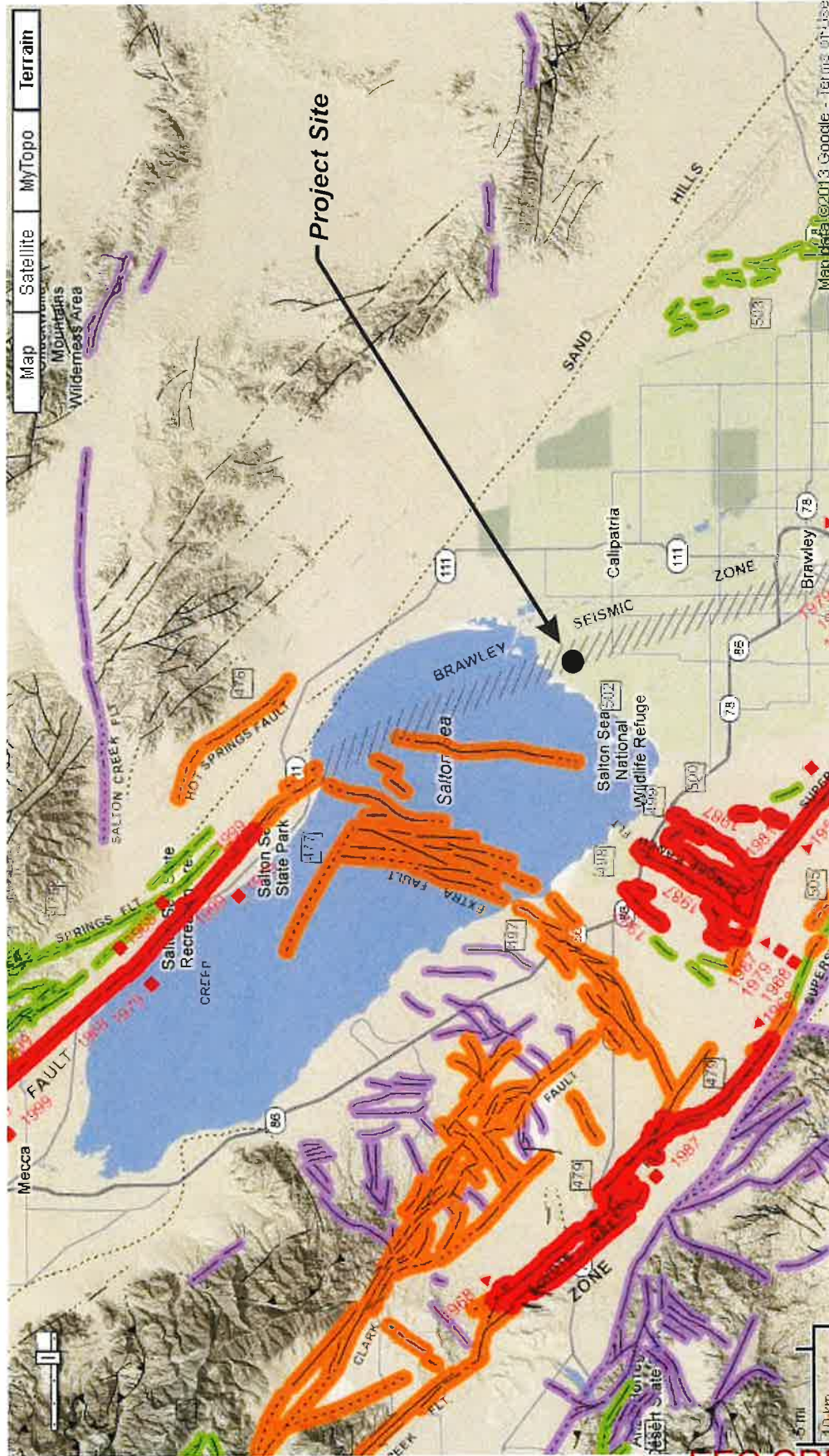
Source: California Geological Survey 2010 Fault Activity Map of California  
<http://www.quake.ca.gov/maps/FAM/faultactivitymap.html#>

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 Project No.: LE24043

Regional Fault Map

Figure 1

EEC ORIGINAL PKG



Source: California Geological Survey 2010 Fault Activity Map of California  
<http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html#>

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 Geo-Engineers and Geologists  
 Project No.: LE24043

Map of Local Faults

Figure 2

LEC ORIGINAL PKG

## EXPLANATION

Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays. Fault traces are queried where construction or evidence is uncertain. Concealed faults in the Grand Valley are based on maps of selected subsurface horizons, so occasional, broken are approximate and may indicate structural trend only. All offshore faults based on seismic reflection profile records are shown as solid lines where well defined, dashed where inferred, queried where uncertain.

### FAULT CLASSIFICATION COLOR CODE (Indicating Recency of Movement)

Faults along which rupture (last 200 years) displacement has occurred and is associated with one or more of the following:

- (a) a recorded earthquake with surface rupture. (Also included are some well-defined surface breaks caused by ground shaking during earthquakes, e.g. extensive ground breaking, not on the White Wolf fault, caused by the Ancho-Tenochapil earthquake of 1932). The date of the associated earthquake is indicated. Where repeated surface ruptures on the same fault have occurred, only the date of the latest movement may be indicated, especially if earlier reports are not well documented as to location of ground breaks.
- (b) fault creep slippage - slow ground displacement usually without accompanying earthquakes
- (c) displaced survey lines.

A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangles indicate known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.

Date bracketed by triangles indicates local fault break.

No triangle by date indicates an unimmediate point along fault break.

Fault that exhibits fault creep slippage. Markers indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.

Square on fault indicates where fault creep slippage has occurred that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points)

Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, inner scarps, shutter ridges, and triangular faulted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults, except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.5 million years; possible exceptions are faults which displace rocks of undifferentiated Pliocene-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.

Pre-Quaternary fault (older than 1.5 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissance nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

## ADDITIONAL FAULT SYMBOLS

Bar and belt on downthrown side (relative or apparent).

Arrows along fault indicate relative or apparent direction of lateral movement.

Arrow on fault indicates direction of dip.

Low angle fault (bars on upper plate). Fault surface generally dips less than 45°, but locally may have been subsequently steepened. On offshore faults, bars simply indicate a reverse fault regardless of steepness of dip.

## OTHER SYMBOLS

Numbers refer to annotations labeled in the appendices of the accompanying report. Annotations include fault name, age of fault displacement, and pertinent references including Earthquake Fault Zone maps where a fault has been zoned by the Alquist-Priolo Earthquake Fault Zoning Act. This Act requires the State Geological to delineate zones to encompass faults with Holocene displacement.

Structural discontinuity (jubilee) separating differing Neogene structural domains. May include disconformities between basement rocks.

Recently Seismic Zone, a leader zone of seismicity locally up to 10 km wide associated with the releasing slip between the Imperial and San Andreas faults.

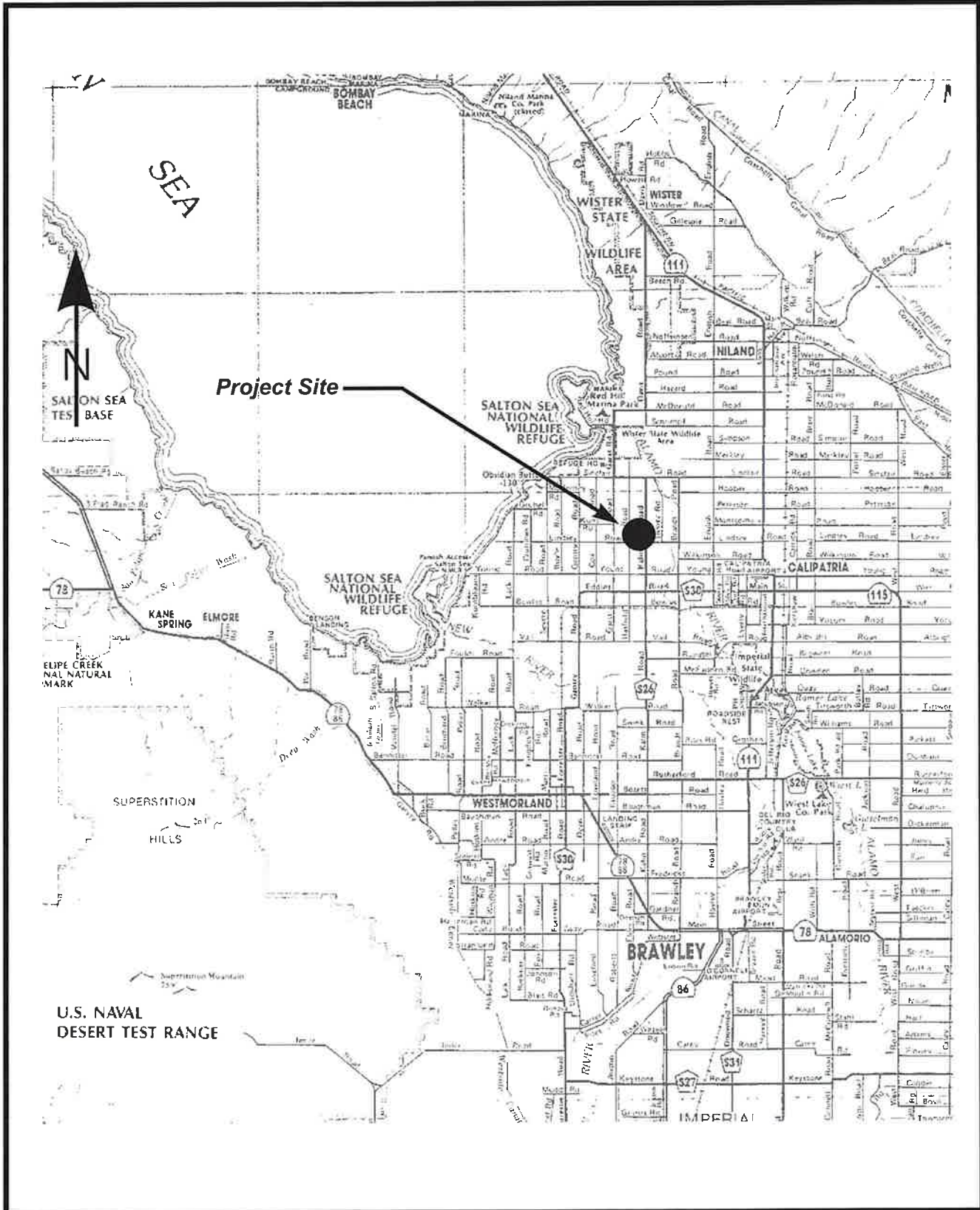
Geologic Time Scale	Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
				ON LAND	OFFSHORE
Quaternary	200			Displacement along a fault line is 9.5 m (Appendix A, Table 1.2)	
	11,700			Fault shows evidence of Holocene displacement	
Late Quaternary	700,000			Fault shows evidence of Late Quaternary displacement	
	1,600,000			Displacement Quaternary faults - most have no direct evidence of displacement during Quaternary time. Not necessarily inactive	
Pre-Quaternary	4.5 million (Age of Earth)			Faults without recognized Quaternary displacement or displacement during Quaternary time. Not necessarily inactive	Faults show evidence of Quaternary or older age.

\* Quaternary age reclassified as according to J. A. (Muller and Clemens, 2009). Quaternary faults in this map were established using the previous 1:50,000 criteria.



**APPENDIX A**

EEC ORIGINAL PKG



**LANDMARK**  
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Project No.: LE24043

Vicinity Map

**EFC ORIGINAL PKG**

Plate  
A-1



Map Scale: 1" = 100' (printed on a standard 8.5" x 11" sheet)

0 200 400 600 800 1000 Feet

0 200 400 600 800 1000 Meters

**LANDMARK**  
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Project No.: LE24043

Soil Survey Map

EEC ORIGINAL PKG

Plate  
A-3

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.










































Soil Survey Area: Imperial County, California, Imperial Valley Area  
 Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2021—May 29, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

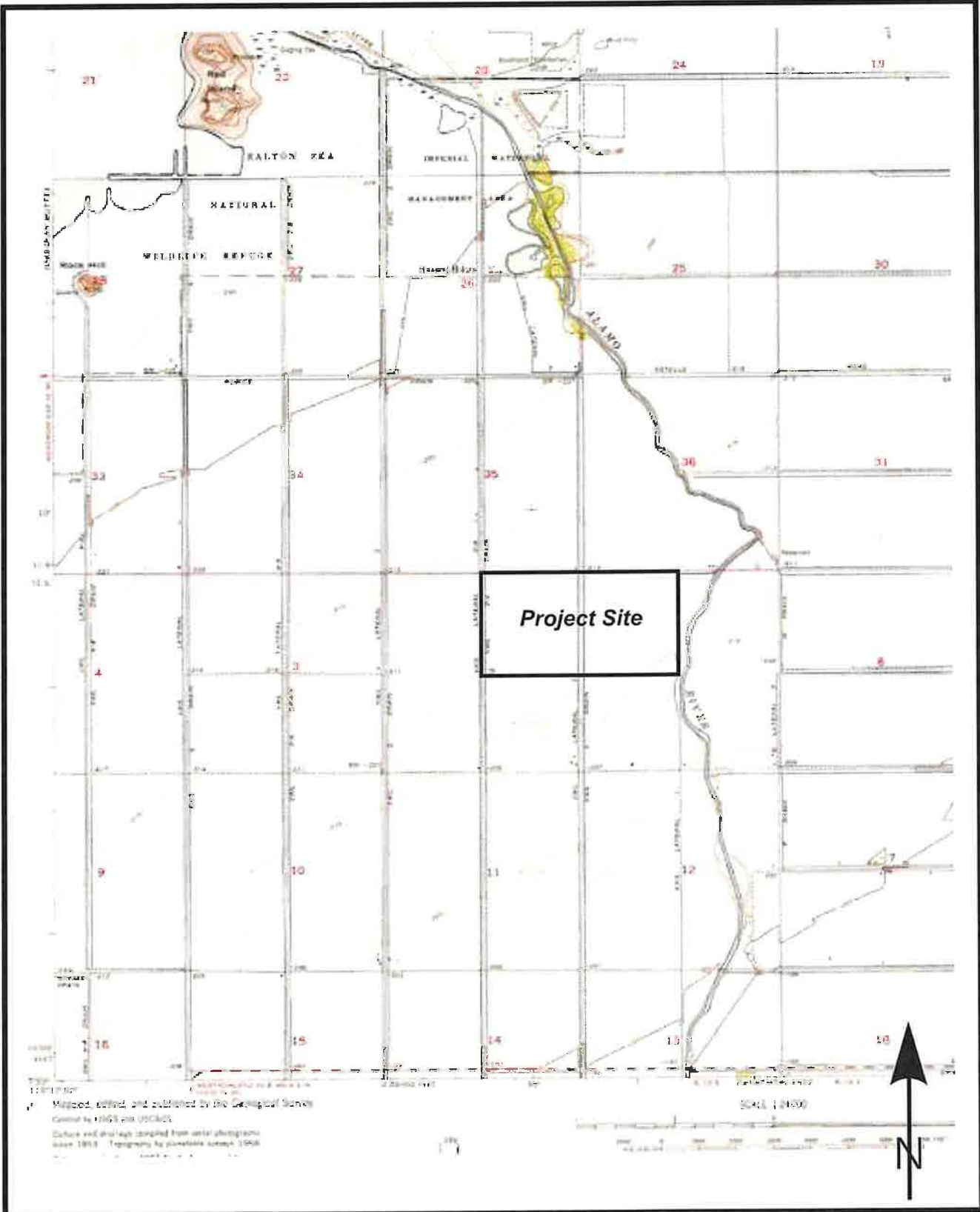
## MAP LEGEND

- |  |   |
|--|---|
|  Area of Interest (AOI) |  Spoil Area            |
|  Soils                  |  Stony Spot            |
|  Soil Map Unit Polygons |  Very Stony Spot       |
|  Soil Map Unit Lines    |  Wet Spot              |
|  Soil Map Unit Points   |  Other                 |
|  Special Point Features |  Special Line Features |
|  Blowout                |  Water Features        |
|  Borrow Pit             |  Streams and Canals    |
|  Clay Spot              |  Transportation        |
|  Closed Depression      |  Rails                 |
|  Gravel Pit             |  Interstate Highways   |
|  Gravelly Spot          |  US Routes             |
|  Landfill               |  Major Roads           |
|  Lava Flow              |  Local Roads           |
|  Marsh or swamp         |  Background            |
|  Mine or Quarry         |  Aerial Photography    |
|  Miscellaneous Water    |   |
|  Perennial Water        |   |
|  Rock Outcrop           |   |
|  Saline Spot            |   |
|  Sandy Spot            |   |
|  Severely Eroded Spot |   |
|  Sinkhole             |   |
|  Slide or Slip        |   |
|  Sodic Spot           |   |

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
110	Holtville silty clay, wet	293.0	35.1%
114	Imperial silty clay, wet	168.0	20.1%
115	Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes	368.4	44.1%
145	Water	5.8	0.7%
<b>Totals for Area of Interest</b>		<b>835.2</b>	<b>100.0%</b>

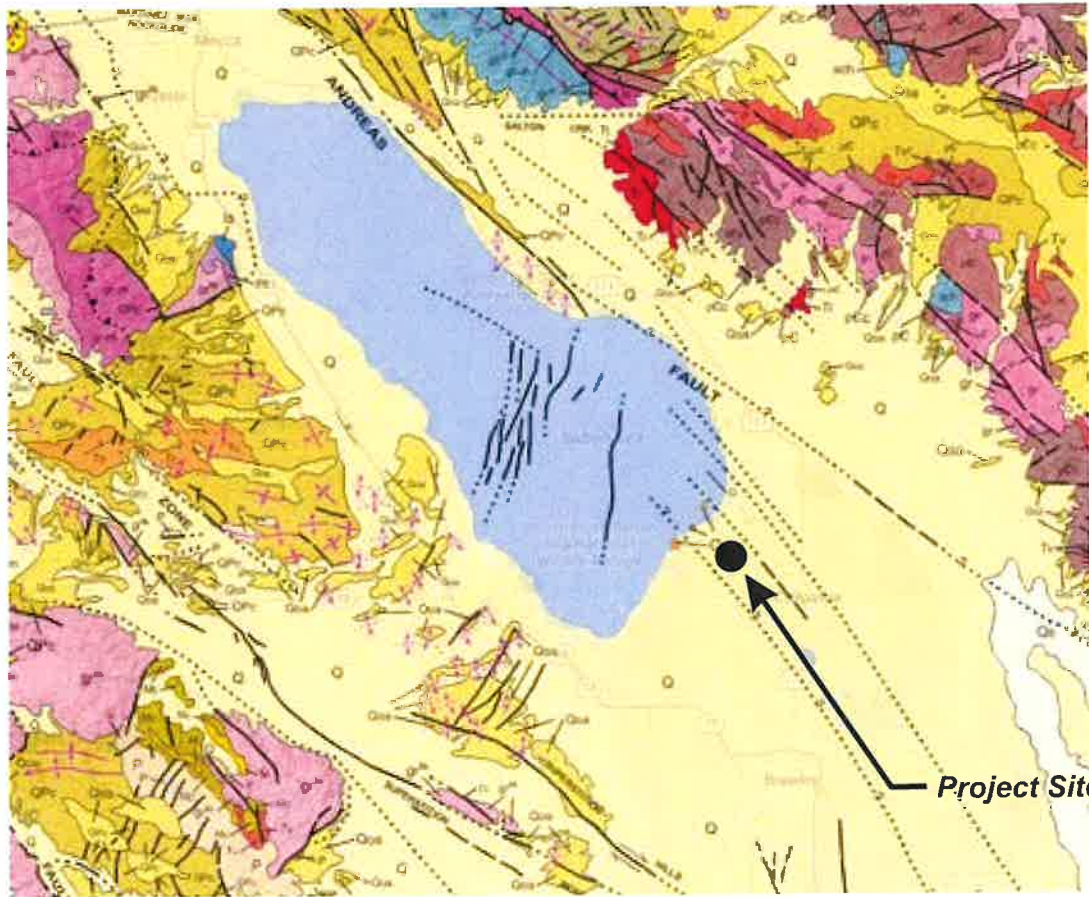




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 Project No.: LE24043

Topographic Map  
 EEC ORIGINAL PKG

Plate  
 A-4



**GEOLOGIC LEGEND**

**Quaternary Deposits**



**Cretaceous Volcanic Rocks**



**Tertiary Sedimentary Rocks**



**Tertiary Volcanic Rocks**



**Tertiary Plutonic Rocks**



**Mesozoic Sedimentary and Metasedimentary Rocks**



**Devonian Mixed Rocks**



**Mesozoic Metavolcanic Rocks**



**Mesozoic Plutonic Rocks**



**Paleozoic Sedimentary and Metasedimentary Rocks**



**Paleozoic Mixed Rocks**



**Paleozoic Metavolcanic Rocks**



**Paleozoic Plutonic Rocks**



**Pre-Cambrian Rocks**



**SYMBOLS**

Geologic boundary



Fault lines - solid where well located, dashed where approximately located or inferred, dotted where concealed and special where distribution or existence is uncertain. Dots and bar on downthrown side (strike-slip faults). Arrows indicate direction of lateral movement (strike-slip or normal).

Thrust fault (bars on upper plate)

Regional strike and dip of stratified rocks

Regional strike and dip of stratified rocks (contoured)

Anticlinal fold

Synclinal fold

Monoclinial fold



Site Location  
Lat: 33.1585N Long: -115.5798W

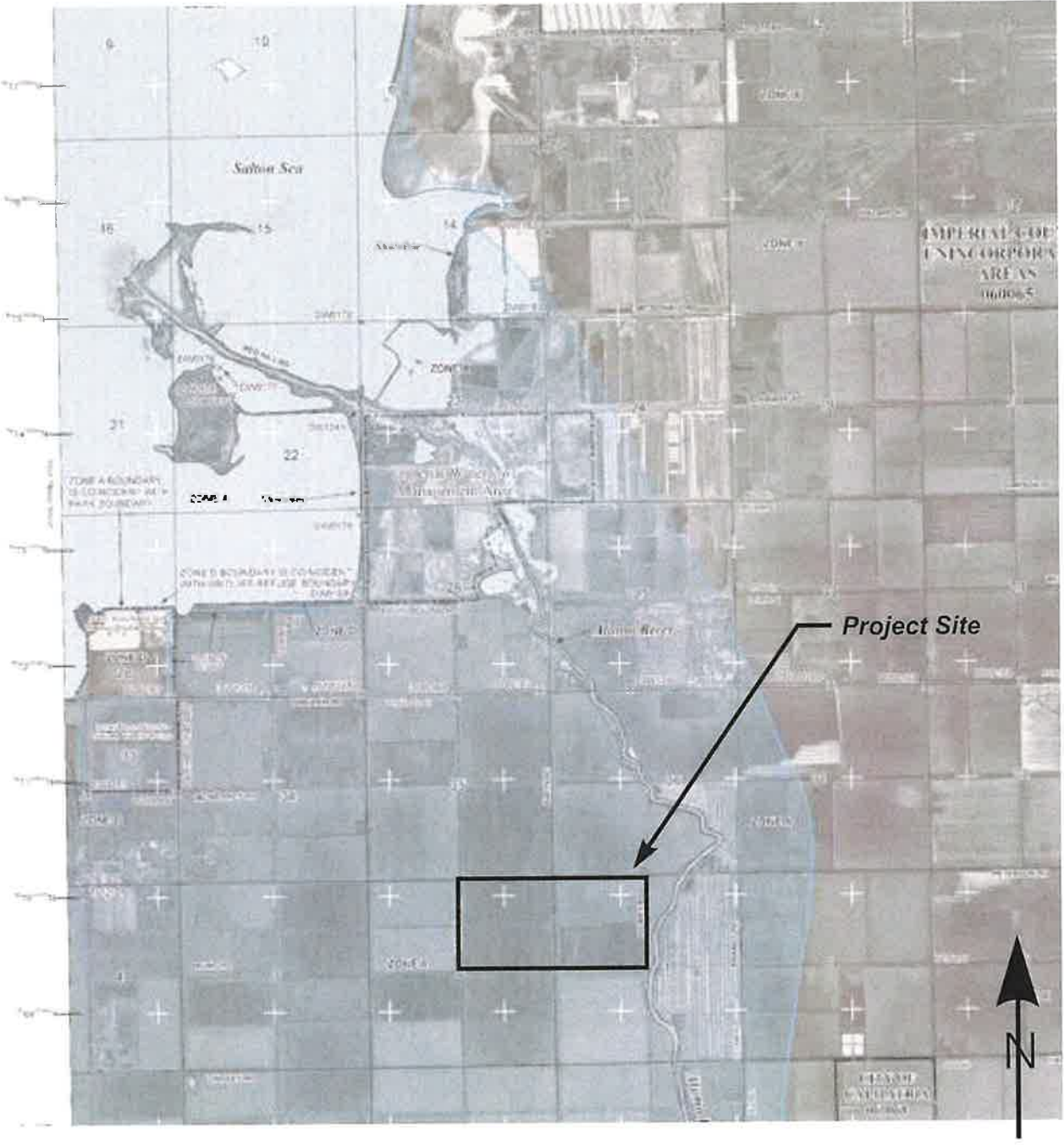
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Regional Geologic Map

Plate  
A-5

EEC ORIGINAL PKG



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FEMA Flood Map

EEC ORIGINAL PKG

Plate  
A-6



# LEGEND



## SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



## FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



## OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



## OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.



## COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



## OTHERWISE PROTECTED AREAS (OPAs)

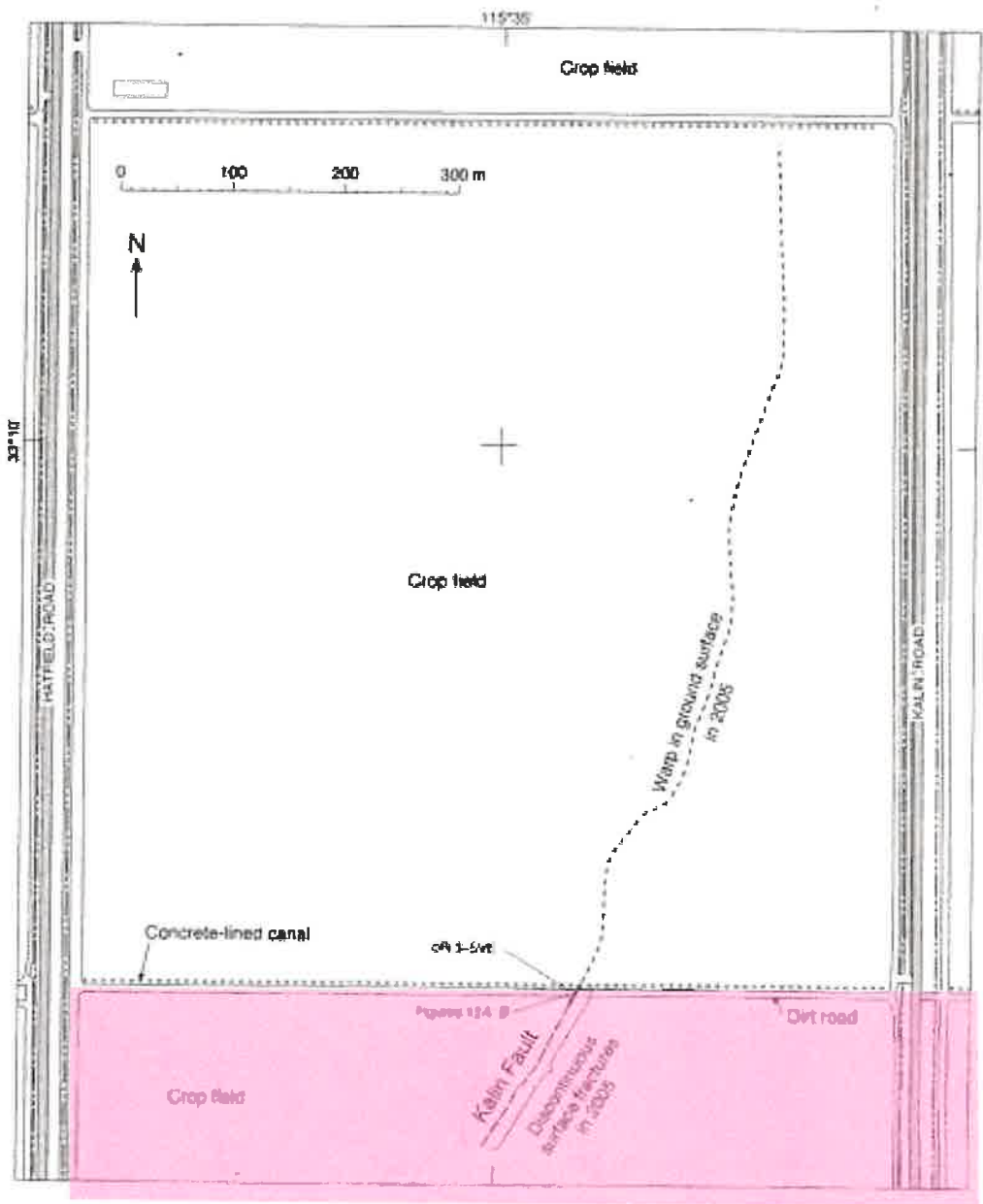
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*

\* Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- $87^{\circ}07'45", 32^{\circ}22'30"$  Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- $-76^{\circ}11'$  1000-meter Universal Transverse Mercator grid values, zone 13N
- 600000 FT 5000-foot grid ticks; California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection
- DX5510  $\times$  Bench mark (see explanation in Notes to Users section of this FIRM panel)
- $\bullet$  M1.5 River Mile

EEC ORIGINAL PKG



**Figure 11.** Map of Kalin Fault with location of surface fractures formed in association with 2010 El Mayor-Cucapah earthquake (see fig. 1 for location of map).

**LEGEND**

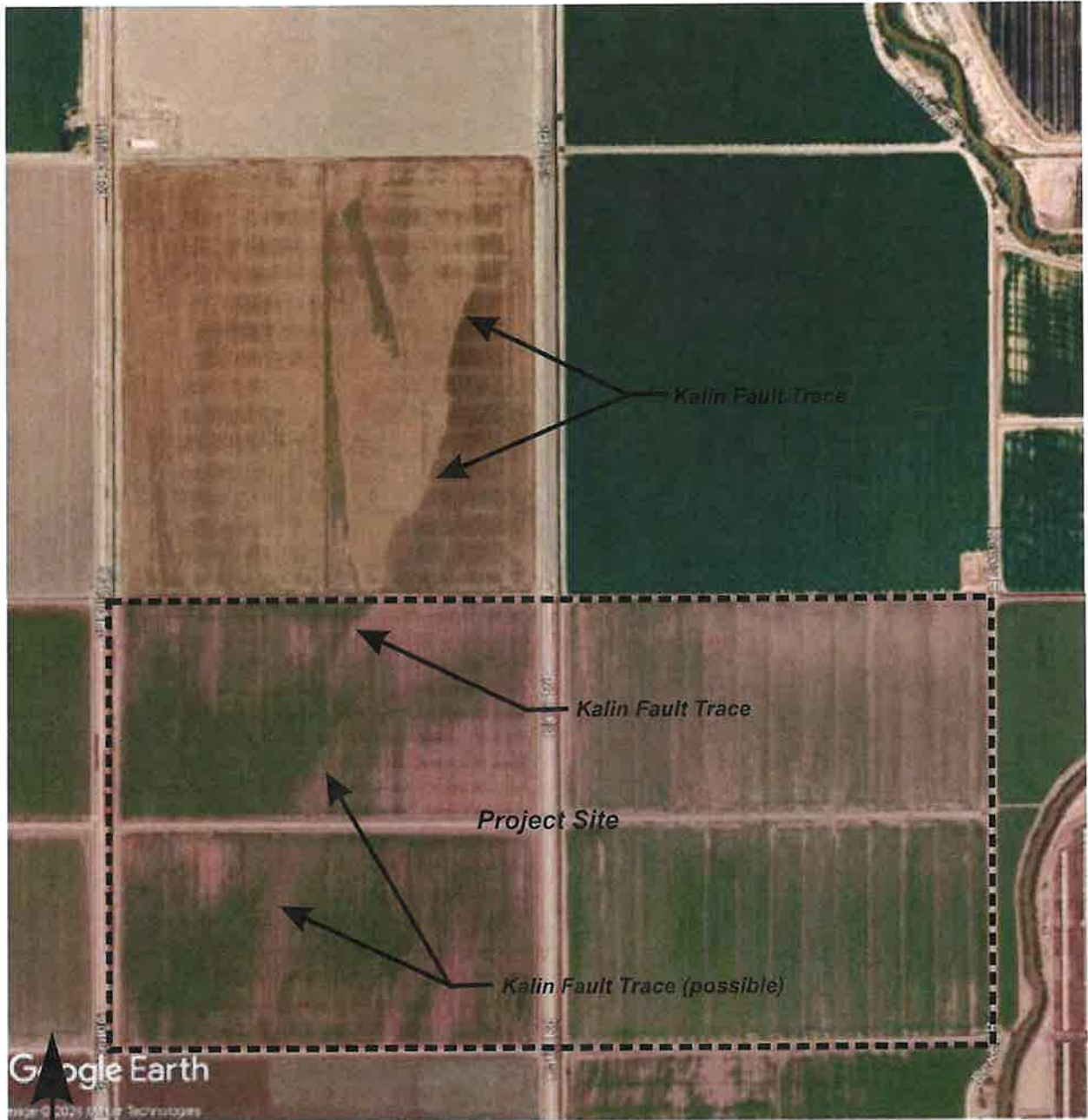
Portion of Project Site

**LANDMARK**  
 Geo-Engineers and Geologists  
 Project No.: LE24043

Fault Map

Plate  
 A-7

EEC ORIGINAL PKG

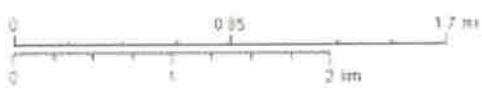
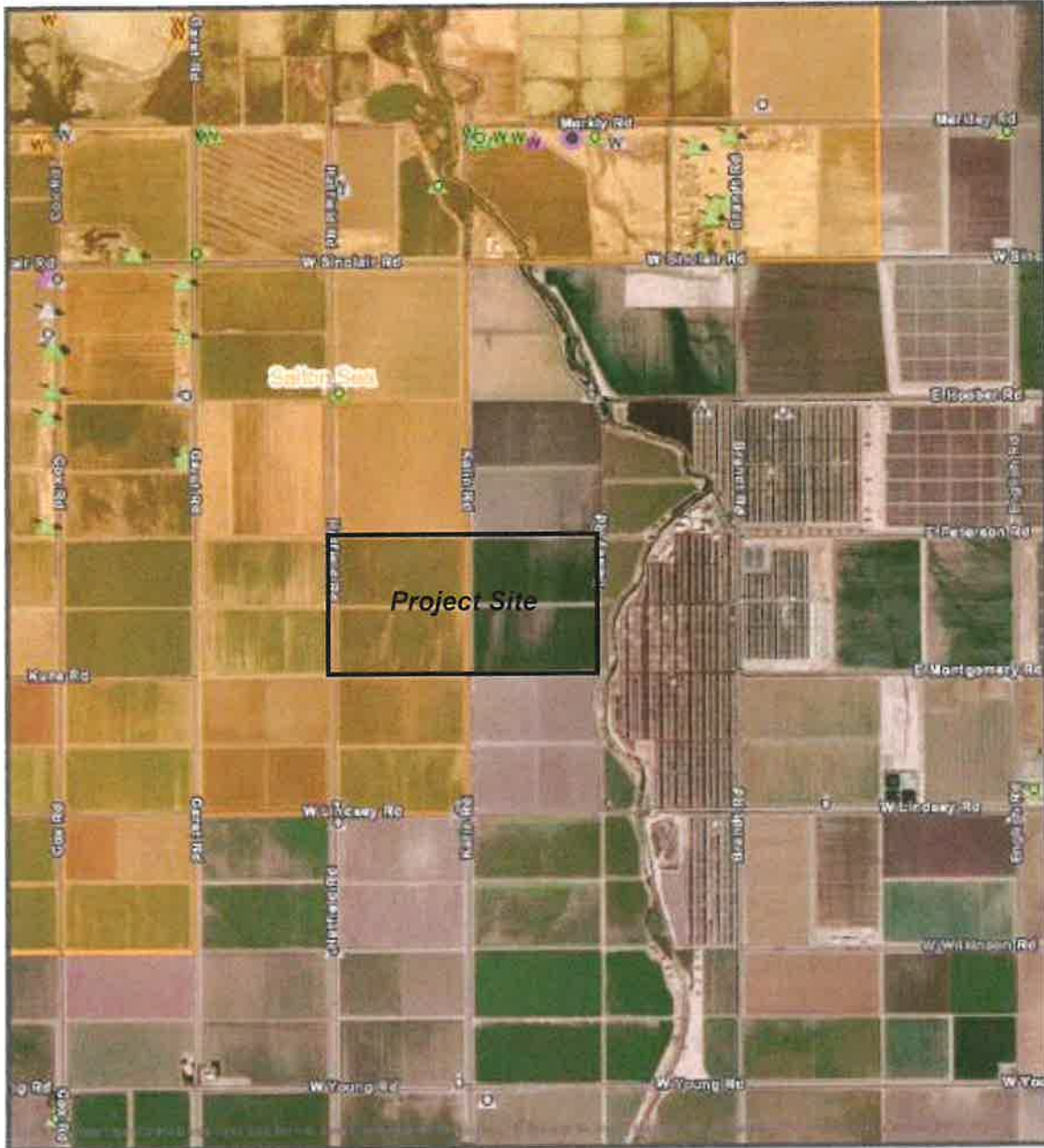


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Project No.: LE24043

Aerial Photograph Showing  
Kalin Fault Trace

Plate  
A-8

EEC ORIGINAL PKG



Powered by  
306/0024

Well Status & Type



California Geologic Energy Management Division  
715 P Street, MS 1803  
Sacramento, CA 95814  
Phone: (916) 445-9886  
Email: [calgem@naturalresources.ca.gov](mailto:calgem@naturalresources.ca.gov)  
[www.naturalresources.ca.gov/calgem](http://www.naturalresources.ca.gov/calgem)

California Natural Resources Agency  
Department of Conservation

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Map Showing Geothermal Well Locations

Plate  
A-9

ECC ORIGINAL PKG

GLOBAL LITHIUM ENERGY CORPORATION  
BIOLOGICAL RESOURCES  
ASSESSMENT REPORT  
CALIPATRIA, CALIFORNIA

December, 2024

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<i>Appendix D</i>	<i>Maps</i>
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<i>Figure 1</i>	<i>Regional/Project Location Map</i>
<i>Figure 2</i>	<i>Biological Resources Map</i>

**TABLES**

<i>TABLE 1: FIELD SURVEY SCHEDULE</i>
<i>TABLE 2: VEGETATIVE COMMUNITIES</i>
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<i>TABLE 5: EXPECTED IMPACTS</i>

## EXECUTIVE SUMMARY

General biological surveys and Habitat Assessment Burrowing Owl Protocol Survey was conducted on December 3, 2024 within the proposed site. The approximately 160-acres of which 17 are proposed for the drill site are located within Imperial County, CA.

No federal or state botanical endangered or threatened species were found within the project site areas or buffer survey zone during this survey.

Burrowing owls, a California proposed endangered or threatened species, were observed on site but outside of the drilling site buffer zone. No active Migratory Bird Treaty Act bird nests were found on site or buffer zone but ground nesting could be expected.



## 1.0 INTRODUCTION

### 1.1 LOCATION

The GLEC geothermal exploration project is located on Assessor's Parcel APNs 020-120-025, along the Alamo River in Imperial County, California, approximately 6.5 miles southeast of the townsite of Niland, CA and 4 miles northeast of the City of Calipatria, CA. The project site consists of agricultural use land divided into four 80-acre fields. The entire 320 acre project site is bounded on the east by Dewey Road and the west by Hatfield Road, both of which are unpaved county roads. Kalin Road, a paved county road, crosses north-south through the middle of the project site. Dirt field roads and concrete lined irrigation ditches form the northern and southern property boundaries. The 160 acre field within which the well pad will be located is bound by paved Kalin Road on the west; Dewey Road on the east; dirt field roads on the north and south. The well pad is situated in the southeast corner; 1500 feet long and 520 feet wide with access from the existing field road at the south boundary. The Alamo River is located east of the project site beyond which is the Brandt Cattle feedlot. The project site is flat and ranging in elevation from 210 to 215 feet below mean sea level (MSL). A surface disturbance identified as the Katlin Fault Trace transects the northwest section of the project site (Landmark, 2024), as described in Figure 1 and Figure 2.

Figure 1: Location Map

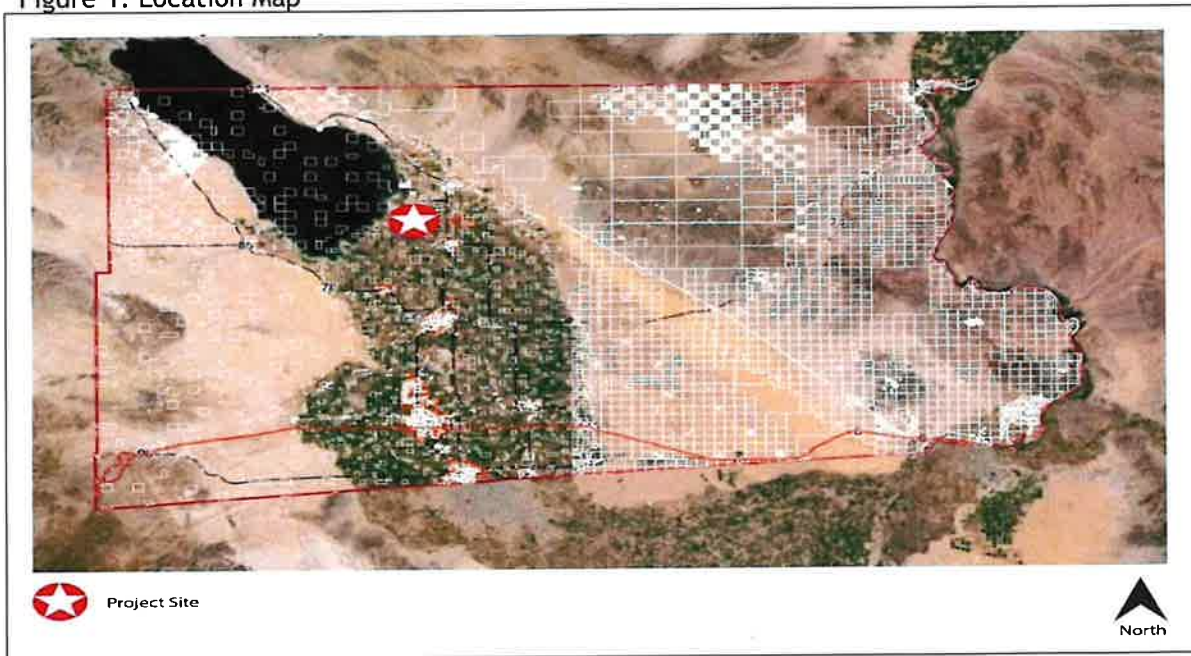


Figure 2: Project Site



## 1.2 PROJECT DESCRIPTION

At this stage in Global Lithium Energy Corp.'s (GLEC) development plan, GLEC aims to implement an exploration and evaluation program to demonstrate the commercial viability of the geothermal resource on its leasehold. The scope of work includes:

- **Civil Works:** Creation of access paths to well pads and construction of well pads.
- **Well Pad Locations:** Two pad locations are proposed to provide flexibility in the exploration program. The minimum number of pads will be constructed. If the resource can be proven from a single pad, only one pad will be constructed. If more are required, up to two well pads and two wells could be built.
- **Drilling:** Exploration wells will be drilled from the well pads. The development preference is to start with pad 1. If necessary, pad 2 will be used as a secondary option.
- **Well Evaluation:** After construction, the exploration wells will be evaluated using wireline logs and downhole sampling tools, followed by a limited production flow test. Produced brine will be stored in holding tanks and reinjected after each segment depth test.
- **Brine Testing:** Once drilled to an estimated depth of 6,000 feet, a small but continuous brine flow will be taken from the well, assuming it is artesian in nature. A sample of the produced brine will be sent to regional certified laboratories for additional analysis.

The proposed exploratory wells aim to test and evaluate the geothermal resource (both thermally and mineral-wise) to prove its technical and fiscal viability. A maximum of two exploratory wells and two well pads are proposed, with the number of wells determined by the ongoing results of the exploration program. The primary objective is to verify the geothermal resource with as few test wells as possible.

If the exploration program is successful and the data indicate viable resource development, the exploration wells will transition into the permitting phase for full-scale field development as geothermal extraction/return injection wells. If the program is unsuccessful, the exploration wells will be plugged and abandoned in accordance with California Division of Oil, Gas, and Geothermal Resources (CDOGGR) requirements.

## 1.3 POSSIBLE APPLICABLE ENVIRONMENTAL REGULATIONS

### 1.3.1 STATE OF CALIFORNIA

**California Environmental Quality Act (CEQA)** Title 14 CA Code of Regulations 15380 requires that endangered, rare or threatened species or subspecies of animals or plants be identified within the influence of the project. If any such species are found, appropriate measures should be identified to avoid, minimize or mitigate to the extent possible the effects of the project.

**Native Plant Protection Act** CDFG Code Section 1900-1913 prohibits the taking, possessing, or sale within the state of any plant listed by CDFG as rare, threatened, or endangered.

**CA Fish and Game Codes 3503, 3503.5, 3513** protect migratory birds, bird nests and eggs including raptors (birds of prey) and raptor nests from take unless authorized by CDFW.

**CA Fish and Game Code Section 1600, as amended** regulates activities that substantially diverts or obstructs the natural flow of any river, stream or lake or uses materials from a streambed. This can include riparian habitat associated with watercourses.

**State of CA Fully Protected Species** identifies and provides additional protection to species that are rare or face possible extinction. These species may not be taken or possessed at any time except for scientific research or relocation for protection of livestock.

**California Endangered Species Act (CESA)** protects all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved.

**Porter-Cologne Water Quality Control Act, as amended** is administered by the State Water Resource Control Board (SWRCB) to protect water quality and is an avenue to implement CA responsibilities under the federal Clean Water Act. This act regulates discharge of waste into a water resource.

---

### 1.3.1 FEDERAL

**National Environmental Policy Act (NEPA: 42 United States Code (U.S.C.) 4321 et seq)** established national environmental policy and goals for the protection, maintenance and enhancement of the environment. A process is available for implementation goals within federal agencies. NEPA requires federal agencies to consider the environment in processing proposed actions.

**Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544)** protects federal listed threatened and endangered species from unlawful take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or significantly modify habitat. If a proposed project would jeopardize a threatened or endangered species, then a Section 7 consultation with a federal agency could be required.

**Migratory Bird Treaty Act (50 Code Federal Regulations (CFR) 10.13)** is a federal statute with several foreign countries to protect species that migrate between countries. Over 850 species are listed and may not be disrupted during nesting activities. It is illegal to collect any part (nest, feather, eggs, etc.) of a listed species, disturb species while nesting or offer for trade or barter any listed species or parts thereof.

**Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)** protects bald and golden eagles from take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or interference with breeding, feeding or sheltering activities.

**Clean Water Act, 1972 (CWA 33 U.S.C. 1251 et seq.)** regulates discharges into

waters of the U.S. EPA is given the responsibility to implement programs to prevent pollution.

## 2.0 BIOLOGICAL SURVEY METHODOLOGIES

The purpose of the survey was to determine the inventory of biological resources at the time of the survey; the possibility of the existence of endangered, threatened, sensitive or species of concern within project area: map habitats, and to ascertain the probability of the presence of sensitive species on site.

### 2.1 FIELD SURVEYS

#### 2.1.1 GENERAL BIOLOGICAL SURVEY

The surveys were intended to assess presence or the potential for species to occur based on habitat suitability. A Habitat Assessment Focused Burrowing Owl survey was also conducted.

California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), California Native Plant Society database (CNPS), United States Fish and Wildlife Service (USFWS)/Carlsbad office Sensitive Species list, field guides, personal contacts and other methods were utilized to ascertain potential for sensitive species on the site. Appendix A Sensitive Botanical and Zoological Species (CNDDDB/CNPS) records the species that have been observed in the Niland Quadrangle; documents presence/absence and site potential of habitat for sensitive species; Appendix C species found during the survey;

Pedestrian biological survey of the approximately 160-acre project area and buffer zones, where possible, to document vegetation and zoological species was conducted by biologists Glenna Barrett and Jacob Calanno, as indicated in Table 1: Field Survey Schedule. The survey was conducted to develop an inventory of species (plant and animal) present at the time of the survey, map vegetative communities, if present and ascertain the potential for occurrence of sensitive, endangered or threatened species within the project area and vicinity.

TABLE 1: FIELD SURVEY SCHEDULE

Date/Conditions	Surveyors	Survey Time
12/03/24 0700-0830 44-58°F 0-30% cloud cover, 4-8 mph	Glenna Barrett/Jacob Calanno	1.5
Total all surveyors		3.0 hrs.

Garmin GPS, binoculars, thermometer, anemometer and digital cameras were used.

#### 2.1.2 JURISDICTIONAL DELINEATION

FEMA Map 06025C0725C rates the area as Zone A: High risk flood areas have a 1 in 4 chance of flooding during a 30-year mortgage, otherwise known as a 1% annual flood risk. "A" areas are

typically located near ponds, streams, and rivers. These features increase the likelihood of flood waters damaging the surrounding area

There are no blue line waterways on the map (Quadrangle Map: Niland).

There are several drainage ditches (Vail Two Drain) and canal (Vail Lateral/Vail Lateral 2) in the vicinity that would not meet the criteria for wetlands by either USACE or CDFW; the habitat should not be considered jurisdictional by either agency. The project does not propose to alter the existing drainage of the site or area. The drainage ditch and canal, connect upgradient and downgradient to offsite properties with agricultural activities that would continue to operate. The project will not terminate their operation or function for agricultural purposes. Therefore, the drainage ditch and canal, would still be covered per the USACE Section 404(f) exemptions.

## 2.2 LITERATURE REVIEW

Potential occurrence for endangered, threatened, sensitive, species of concern and noxious weeds was determined by perusal of appropriate data bases which included:

- CA Natural Diversity Database (CNDDDB) Summary attached in Appendix A
- CA Native Plant Society (CNPS) Rare Plant Program Summary attached in Appendix A
- USFWS IPaC
- CA Food and Agriculture Department Noxious Weed Information Project

## 3.0 EXISTING CONDITIONS

### 3.1 TOPOGRAPHY AND SOILS

This construction site is located in Imperial County and is found in the northern part of the county. Landforms are alluvial fans derived from igneous rock and are typically sand to fine sand. The soil types are 61.3% Imperial-Glenbar silty clay loams, wet (115) Slope: 0 to 2 percent; Depth to restrictive feature: More than 80 inches; Drainage class: Moderately well drained; Runoff class: Low; Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.2 to .57 in/hr); Depth to water table: More than 80 inches; Frequency of flooding: None; Frequency of ponding: None. Designated as Farmland of statewide importance; 21% Imperial silty clay, wet, Slope: 0 to 2 percent; Depth to restrictive feature: More than 80 inches; Drainage class: Moderately well drained; Runoff class: Low; Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.2 to .57 in/hr); Depth to water table: More than 80 inches; Frequency of flooding: None; Frequency of ponding: None. Designated as Farmland of statewide importance; 17.7% Holtville silty clay, wet, Slope: 0 to 2 percent; Depth to restrictive feature: More than 80 inches; Drainage class: Moderately well drained; Runoff class: Low; Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.2 to .57 in/hr);

Depth to water table: More than 80 inches; Frequency of flooding: None; Frequency of ponding: None. Designated as not prime farmland.

The elevation on this site is approximately -209 feet (below mean sea level).

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### 3.2.1 VEGETATION COMMUNITY

Vegetation has been divided into communities that are groups of plants that usually coexist within the same area. This area is considered the Colorado Desert. No native vegetation is present as this area has been converted into agricultural property.

TABLE 2: VEGETATIVE COMMUNITIES

Parcels	Acreage	Description	Vegetative Communities
Assessor's Parcel APN 020-120-025	Approximately 160 acres; 17 acres of drill site	Agricultural crops	Agricultural crops

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### 3.2.2 AGRICULTURE

Site has been used for agricultural crops for several decades.

This area is intensively used for production of agricultural crops. It is not a favorable habitat for wildlife as the crop mix is constantly changed. This is essentially an commercial agricultural site dedicated to food production. Due to Food Safety guidelines, wildlife usage is discouraged and insect populations are controlled.

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### 3.2.3 VEGETATION

The site is used for agricultural crops. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (California Department of Fish and Wildlife) states that it is appropriate to conduct a botanical field survey when:

Natural (or naturalized) vegetation occurs in an area that may be directly or indirectly affected by a project (project area), and it is unknown whether or not special status plants or sensitive natural communities occur in the project area.

No natural or naturalized vegetation occurs in this agriculture culture. This property has been dedicated to these activities for decades (over 50 years) thus eliminating any native species through practices which include use of agriculture equipment and practices such as discing, plows, harrows, levelers, tractors, pesticide applications, harvesting activities. Therefore no Special Status Native Plant Population surveys would be needed.

### 3.3 WILDLIFE

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#### 3.3.1 INVERTEBRATES

The project site is used for agricultural crops. Typical urban pests such as ants, grasshoppers, aphids, beetles would be expected; identified in Appendix C.

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#### 3.3.2 AMPHIBIANS

Reliable moisture is a requirement for a portion of amphibian life cycle. The project site is used for agricultural crops. No amphibians were observed on site.

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#### 3.3.3 REPTILES

The project site is used agricultural crops. Reptiles utilize habitat dependent upon their dietary requirements. Some species diet includes vegetation while others consume insects. All require vegetation for shelter. No lizards were found and would not be expected due to the disturbed nature of the site.

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#### 3.3.4 BIRDS

Bird species diversity varies with seasons, variety and quality of vegetative communities.

Birds were observed in the vicinity. List of species observed is found in Appendix C.

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#### 3.3.5 MAMMALS

Signs of mammals were observed on sites but were assumed to be canines (either dogs or coyotes) and pocket gophers. Bats are not expected; roosting sites are not available. The mammals that were found are identified in Appendix C.

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#### 3.3.6 FISH

The project site is used for agricultural crops; no water resources on site. Fish would not be expected.



### 3.4 SENSITIVE BIOLOGICAL RESOURCES

#### 3.4.1 SPECIAL STATUS SPECIES

TABLE 3. SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON SITE

Special-Status Species	Legal Status	Found	Potential for Occurrence
Burrowing owl (BUOW) <i>Athene cunicularia</i>	Federal: None State: Proposed Endangered/ threatened	Yes	BUOW and shelter burrows were found onsite
Flat-tailed horned lizard (FTHL) <i>Phrynosoma mcallii</i>	Federal: None State: Protected, Species of Special Concern	No	Highly disturbed recreational area. No loose, sandy soils occur on site. No FTHL, scat or tracks were identified in the general biological survey. This area is not within a FTHL Management Area. Not expected
Loggerhead shrike <i>Lanius ludovicianus</i>	CDFW: Species of Concern	Yes	Seen on site - Highly disturbed acreage with sparse available nesting opportunities. Lizards which are prey were not seen.
Northern Harrier <i>Circus cyaneus</i>	CDFW: SC Species of Concern	No	Sparse populations of prey observed; could be found hunting in area but not nesting
Yuma clapper rail (Ridgeway Rail) <i>Rallus longirostris yumanensis</i>	Fed: Endangered Ca: Threatened	No	None observed or heard; cattails /phragmites not found in dense stands. Not expected on site.

#### 3.4.2 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

Based upon the level of disturbance or habitat conversion within adjacent areas, vegetative communities are considered rare or sensitive. Rare vegetation types that are converted and degraded can disrupt the integrity of the ecological functions of natural environments. This can lead to the loss of sensitive plant species and a resulting decrease in biodiversity. Wetland or riparian habitat communities are considered sensitive by CDFW.

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### 3.4.3 Jurisdictional Waters

Wetlands and other “waters of the United States” that are subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act are under the jurisdiction of the U.S. Army Corp of Engineers (ACOE).

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### 3.4.4 Habitat Connectivity and Wildlife Corridors

The ability for wildlife to freely move about an area and not become isolated is considered connectivity and is important to allow dispersal of a species to maintain exchange genetic characteristics; forage (food and water) and escape from predation.

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### 3.4.5 California Desert Conservation Area (CDCA)

This project is not within or immediately adjacent to an Area of Critical Environmental Concern (ACEC) of the CDCA.

## 4.0 PROPOSED PROJECT IMPACT

The proposed impacts are summarized in this section.

### 4.1 IMPACT TO SPECIAL STATUS SPECIES

If this project has a substantial adverse effect, either directly or through habitat modification or elimination, on any plant or animal species that is considered endangered, threatened, candidate for listing or special status species either through federal or state regulations, this project would be considered to have a significant impact.

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#### 4.1.1 BIOLOGICAL RESOURCES

Two special status avian species and no priority plants were observed. The approximately 160 acres are highly disturbed due to agricultural cultivation and no adverse impact is expected directly 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 (CDFW) or U.S. Fish and Wildlife Service when avoidance, minimization and mitigation recommendations are followed.

Biological resources found are listed in Table 4 and Figure 4 Biological Resources Map.

Table 4: BIOLOGICAL RESOURCES

Location	Description	Recommendations
1. Bioresources map #1 33°9'43.56/115°34'24.72"	BUOW perch 2100 feet North of drilling well site; whitewash, pellets	Monitor during drilling
2. Bioresources map #2 33°9'18.0/115°34'32.7"	One BUOW using irrigation pipe as a shelter 277 feet west of drilling well site, whitewash. Not a nesting burrow	Shelter with strawbales and monitor during drilling
3. Bioresources map #3 33°9'17.7/115°34'41.16"	One BUOW using irrigation pipe as a shelter 995 feet west of drilling well site; whitewash, pellets. Not a nesting burrow	Monitor during drilling
4. Bioresources map #4 33°9'30.61/115°34'25.53"	Perch with whitewash; no BUOW 799 feet north of drilling well site	Monitor during drilling
5. Various	Various Avian sightings documented in Appendix C	Preconstruction nesting surveys

#### 4.1.2 SENSITIVE WILDLIFE

##### 4.1.2.1 MBTA NESTING

###### Construction Impact

Ground nesting species, such as lesser nighthawk, black-necked stilt or killdeer could use the bare ground in the vicinity of the construction activity. There are no trees on site to support nesting.

If construction is planned to begin during nesting season (generally February 1 through August 31 dependent upon weather factors), the project area and a 500-foot buffer area should be surveyed to determine presence/absence of nesting. If nests are found, an appropriate buffer zone for the species should be maintained during construction until juveniles have fledged.

There were sparse residential trees in the vicinity of the project; these could support MBTA nesting and should be surveyed and monitored. There is a buffer zone of approximately 400 feet between the drilling site and the Alamo River.

## 4.2 IMPACT TO RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

The distribution of riparian plant species is largely driven by hydrological and soil variables and riparian plant communities frequently occur in relatively distinct zones along streamside elevational and soil textural gradients.

## 4.3 IMPACT TO JURISDICTIONAL WATERS

There are no wetlands or waters of the U.S. found on site; therefore this project will have no impact 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. There are no blue line washes found within influence of the project in the Niland Quadrangle map.

## 4.4 IMPACT TO WILDLIFE MOVEMENT AND NURSERY SITES

The existing land has been used for the past fifty (50) plus years as agricultural. The site itself is permitted Agriculture through the County of Imperial and not favorable to wildlife for the following reasons:

- Currently planted to bermuda which is highly equipment intensive - bermuda is harvested every 4-6 weeks which involves cutting, raking, windrowing, baling and bale removal. Pesticides are applied, generally by ground periodically. Any nest in a bermuda field is highly unlikely to succeed. Literature indicates that once a bird has a nest failure they are not likely to return to that area to re-nest.
- Prey opportunities (mice, insects) are not reliable due to constant disruption of the site. Food Safety guidelines require that rodents and birds be controlled to prevent E. Coli contamination
- These agricultural areas can actually be detrimental to wildlife. A recent study indicates that birds found in agricultural lands more vulnerable to extreme heat and also states that intense commercial farming is known to harm birds. Fields completely clear of trees and other natural barriers lack shelter for wildlife; pesticides and other agricultural chemicals can hurt birds.

The project will not interfere substantially with the currently restricted 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. Industry, commercial and residential areas surround the area and currently fragmented access and as a result, restrict wildlife and nursery sites. No concentrated wildlife movement, aerially or ground based or nursery sites were observed while biologists were on site.

## 4.5 IMPACT TO AIRPORTS

This project has no components that will attract avian populations that would impact airports. It is approximately 2.87 miles from Calipatria Airport which is the closest airport which has minimal air traffic. No impact upon airports is expected.

## 4.6 CEQA IMPACTS

Possible CEQA significant impacts that could include the following within the parameters of this project are found in the following Table 4.

TABLE 5: EXPECTED IMPACTS

Area	Endangered/threatened/ Species of Concern Habitat	Riparian Habitat	Wetlands	Wildlife Corridors	Local Ordinances	Waters of the U.S.
Approximately 160 acres: drill site is approximately 17 acres	None with avoidance/minimization/mitigation measures listed	No	No	No	No	No

## 5.0 RECOMMENDED AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

### 5.1 SENSITIVE WILDLIFE

#### 5.1.1 BURROWING OWL

One Habitat Assessment BUOW protocol survey has been completed. This project is a small 17 acre drill pad with activity limited to between 30 and 90 days. If no resource is found, the site will be shut down and returned to agriculture. If a resource is found, additional permitting will proceed prior to any construction activity. As expected, BUOW activity was observed. This minimally intrusive project should be allowed to proceed without additional breeding season protocol BUOW surveys and BUOW will be protected using the avoidance, minimization and mitigations outlined in Table 4.

The habitat supports BUOW burrowing habitat and BUOW foraging. BUOWs and burrows were observed on the north and south boundaries of the 160 acres between 277-2100 feet of the 17 acre drilling site (Table 4: Biological Resources). A BUOW was observed sheltering in an irrigation pipe outside of a 250 foot buffer zone. A preconstruction survey should be performed 14-30 days and 24 hours prior to initiating ground disturbance. Report should be

submitted to the appropriate agency. If necessary, an Exclusion Plan would be prepared with consultation with CDFW if BUOW are found on site after the initial preconstruction survey.

BUOW or available burrows have been located within the vicinity, as an avoidance activity it is recommended that construction foremen and workers and onsite employees be given bilingual worker training by a qualified biologist regarding burrowing owl that would include the following:

Permittee shall conduct an education program for all persons employed or otherwise working on the Project prior to performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the biology of the habitats and species identified in this letter expected and present at this site. The Designated Biologist or safety manager with access to the Designated Biologist shall also include as part of the education program a brief discussion information about the distribution and habitat needs of any protected species that may be present, legal protections for those species, penalties for violations, and Project-specific protective measures included in this Agreement. Interpretation shall be provided for non-English-speaking workers, and the same instruction shall be provided for any new workers prior to their performing work on-site. The Permittee shall prepare and distribute wallet-sized cards or a fact sheet that contains this information for workers to carry on-site. Upon completion of the education program, employees shall sign a form stating they attended the education program and understand all protection measures. These forms shall be filed at the worksite offices and be available to CDFW upon request. The education program shall be repeated annually for part of the Project extending more than one (1) year. Copies of the education program materials shall be maintained at the Project site for workers to reference as needed. Project contractor responsible for environmental (oil spills/oil containment/dust control/erosion control) training.

Permittee shall include a brief invasive species education program for all persons working on the Project prior to the performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the invasive species currently present within the Project site as well as those that may pose a threat to or have the potential to invade the Project site. The brief discussion shall include a physical description of each species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts. The education program shall also include a brief discussion of Best Management Practices (BMPs) to be implemented at the Project site to avoid the introduction and spread of invasive species into and out of the Project site. Note: the WEAP presentation shall not exceed 30 minutes.

A biologist should be consulted immediately if a dead or injured bird is found on site.

#### Minimization Measures

A qualified biologist will complete an initial take avoidance survey between 14-30 day; and within 24 hours prior to ground disturbance activities using the recommended methods

described in the Detection Surveys found in CDFW Staff Report (2012) section above. Implementation of avoidance and minimization measures would be triggered by positive BUOW presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls prior to vegetation removal or ground-disturbing activities. If burrowing owls are detected during the focused take avoidance preconstruction surveys, the qualified biologist and Project proponent shall prepare an Exclusion Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Plan shall describe proposed avoidance, monitoring, passive relocation, minimization, and/or mitigation actions. The Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Plan shall also describe minimization and compensatory mitigation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. The Plan shall identify compensatory mitigation for the temporary or permanent loss of occupied burrow(s) and habitat consistent with the "Mitigation Impacts" section of the 2012 Staff Report and shall implement CDFW-approved mitigation prior to initiation of Project activities. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls. If no suitable habitat is available nearby, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls shall also be included in the Plan. The Project proponent shall implement the Plan following CDFW review and approval.

An Alternative BUOW Survey Protocol is found in Attachment E. It is recommended to avoid direct or indirect impacts to BUOW, a preconstruction survey for this species should be conducted. If BUOW is present, mitigation will be required. Minimization measures could include preconstruction surveys within 14-30 days and 24 hours of start of ground breaking activities and bilingual worker training.

#### Mitigation Measures

1. If occupied burrows are found on site, and if necessary, the burrows shall be passively relocated by a qualified biologist outside of nesting season and an appropriate number of artificial burrows shall be installed. If possible, these burrows shall be installed as close as possible to the passively relocated burrows. A Plan should be prepared to address activities and conservation efforts and submitted to CDFW.
2. If not in the active construction areas, the occupied burrows can be sheltered in place with appropriate materials under the supervision of a qualified biologist and accordance with the approved Plan.

3. If occupied burrows are sheltered, a biological monitor shall monitor areas of active construction; schedule to be determined by qualified biologist. This biologist will ensure that the project complies with these mitigation measures and will have the authority to halt activities if they are not in compliance. The biologist will inspect the construction areas periodically for the presence of BUOWs.
4. If work is stopped for longer than 30 days, area will be resurveyed prior to restart of construction.

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#### 5.1.2 MIGRATORY BIRDS AND NON-MIGRATORY BIRD SPECIES

Regardless of the time of year, nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities. 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. Construction activities may not occur inside the established buffers, which 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 after concurrence with CDFW.

Presence of nesting birds should be monitored throughout the year. Ground nesting species could be present during the nesting season.

It is recommended that construction foremen and workers and onsite employees be given bilingual worker training by a qualified biologist regarding nesting birds that would include the following:

Permittee shall conduct an education program for all persons employed or otherwise working on the Project prior to performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the biology of the habitats and species identified in this letter expected and present at this site. The Designated Biologist or safety manager with access to the Designated Biologist shall also include as part of the education program a brief discussion information about the distribution and habitat needs of any protected species that may be present, legal protections for those species, penalties for violations, and Project-specific protective measures included in this Agreement. Interpretation shall be provided for non-English-speaking workers, and the same instruction shall be provided for any new



workers prior to their performing work on-site. The Permittee shall prepare and distribute wallet-sized cards or a fact sheet that contains this information for workers to carry on-site. Upon completion of the education program, employees shall sign a form stating they attended the education program and understand all protection measures. These forms shall be filed at the worksite offices and be available to CDFW upon request. The education program shall be repeated annually for part of the Project extending more than one (1) year. Copies of the education program materials shall be maintained at the Project site for workers to reference as needed. Project contractor responsible for environmental (oil spills/oil containment/dust control/erosion control) training.

Permittee shall include a brief invasive species education program for all persons working on the Project prior to the performing any work on-site. The education program shall consist of a presentation from a Designated Biologist or safety manager with access to the Designated Biologist that includes a brief discussion of the invasive species currently present within the Project site as well as those that may pose a threat to or have the potential to invade the Project site. The brief discussion shall include a physical description of each species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts. The education program shall also include a brief discussion of Best Management Practices (BMPs) to be implemented at the Project site to avoid the introduction and spread of invasive species into and out of the Project site. Note: the WEAP presentation shall not exceed 30 minutes.

A biologist should be consulted immediately if a dead or injured bird is found on site.

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#### 5.1.2 INVASIVE PLANTS

Any saltcedar found on construction site should be removed in a manner that will not distribute plant seeds or plant material as overseen by project biologist prior to construction. Use of covered trailers to remove invasive species to an approved landfill is recommended.

Equipment brought onsite should be clean to prevent importing invasive species to site.

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APPENDIX A  
SENSITIVE BOTANICAL AND  
ZOOLOGICAL SPECIES  
(CNDDDB/CNPS) SPECIES

APPENDIX A  
SENSITIVE BOTANICAL AND ZOOLOGICAL SPECIES (CNDDDB/CNPS)  
Niland Quadrangle  
12/03/24

Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
<i>Astragalus sabulonum</i>	gravel milk-vetch	None	None	This is a hairy annual herb with stems up to about 26 centimeters long.	Desert dunes, Mojavean desert scrub, Sonoran desert scrub	No Abrams's spurge found. No habitat
<i>Athene cunicularia</i>	burrowing owl	None	Candidate Endangered	Burrowing owls are small, unusual owls that nest in underground burrows instead of trees.	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland	None observed within 250 feet of site; several offsite.
<i>Charadrius montanus</i>	mountain plover	None	None	The Mountain Plover is about the size of a Killdeer ( <i>Charadrius vociferus</i> ) but with longer legs and more erect posture.	Chenopod scrub, Valley & foothill grassland	None observed; could use during migration
<i>Charadrius nivosus nivosus</i>	western snowy plover	Threatened	None	The western snowy plover is a small shorebird with moderately long legs and a short neck.	Great Basin standing waters, Sand shore, Wetland	None observed; no water resources

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Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
<i>Cyprinodon macularius</i>	desert pupfish	Endangered	Endangered	The desert pupfish is a small fish that is typically less than 7.62 cm (3 in) long; males are larger than females and generally have more vivid markings, especially during breeding seasons.	Aquatic, Artificial flowing waters, Artificial standing waters, Colorado River basin flowing waters, Colorado River basin standing waters	No habitat; none observed
<i>Gelochelidon nilotica</i>	gull-billed tern	None	None	The Gull-billed Tern is medium, stocky and with wide, pale gray wings that have black on the tips. It has a stout black bill, a short notched tail, a white body and black legs.	The Salton Sea, a salt lake in the interior of California, hosts one of the few inland breeding colonies in the United States. Gull-billed Terns at this site nest on eroded levees and small islands in the lake or on human-made islands and small rafts in brackish impoundments adjacent to the shoreline.	Not observed; no habitat; not adjacent to Salton Sea
<i>Hydroprogne caspia</i>	Caspian tern	None	None	Its size, stout red bill, and lack of a deeply forked tail distinguishes it from other white terns found in the state.	Caspian Terns frequent just about any large freshwater body or river inland where they can forage and rest.	Not observed; no habitat; not adjacent to Salton Sea



Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
<i>Inciilius alvarius</i>	Sonoran Desert toad	None	None	At 7 inches (18 cm) or more this is one of the largest toads native to North America. Adults have a uniformly green to greenish-gray dorsum (topside of the body) and creamy white venter (underside).	Aquatic, Artificial flowing waters, Desert wash, Wetland	Not observed; no habitat; not adjacent to consistent flowing water
<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	An adult eastern black rail is gray-black in coloration, with white speckled upperparts, and has a grayish crown, a chestnut-colored nape of the neck, and a short tail.	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland	Not observed; no habitat; not adjacent to consistent flowing water
<i>Lithobates yavapaiensis</i>	lowland leopard frog	None	None	Leopard frogs are from 5 to 11.1 cm long. They are green or greenish-brown dorsally.	Lowland leopard frogs live in and around aquatic habitats in arid canyons and desert scrubland. Although these frogs were historically found in New Mexico and the Imperial valley of California (Imperial and Riverside counties), they are believed to be extirpated from both areas. (Lannoo, 2005)	Not observed; no habitat; not adjacent to consistent flowing water Bullfrogs prey on this species

Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
<i>Melanerpes uropygialis</i>	Gila woodpecker	None	Endangered	They have striking black and white barred patterns on their backs, upper wings, and tails. In flight, large white wing patches can be seen. The rest of the plumage is tan-colored. The male can be identified by the small, round, red cap on his crown (top of the head).	Riparian forest, Riparian woodland	No suitable habitat; no trees
<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	Brown pelicans are easily distinguished by their large body, long bill, and very large gular pouch. They are the darkest plumed of the pelicans. They weigh 2 to 5 kg, and males are 15 to 20% heavier than females.		No suitable habitat; no water
<i>Polioptila melanura</i>	black-tailed gnatcatcher	None	None	The black-tailed gnatcatcher reaches about 4.5 to 5 inches in length, much of it taken up by a long black tail lined with white outer feathers.	Mojavean desert scrub, Sonoran desert scrub	None observed or heard.

EEC ORIGINAL PKG

Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
<i>Rallus obsoletus yumanensis</i>	Yuma Ridgway's rail	Endangered	Threatened	The Yuma Ridgway's Rail ( <i>Rallus obsoletus yumanensis</i> ), a subspecies of the Ridgway's Rail, is a brown marsh bird about the size of a chicken.	Freshwater marsh, Marsh & swamp, Wetland	Not observed; no water march habitat
<i>Rynchops niger</i>	black skimmer	None	None	is a tern-like seabird, one of three similar bird species in the skimmer genus <i>Rynchops</i> in the gull family Laridae.	Alkali playa, Sand shore	Not observed; no water march habitat
<i>Setophaga petechia</i>	yellow warbler	None	None	The bright, sweet song of the Yellow Warbler is a familiar sound in streamside willows and woodland edges.	Riparian forest, Riparian scrub, Riparian woodland	No habitat; none observed.
<i>Sigmodon hispidus eremicus</i>	Yuma hispid cotton rat	None	None	Small brown rodent.	It inhabits dense grass habitats along the south and southeastern U.S. and has been recently reported as expanding northward	Not observed; no trails found
<i>Taxidea taxus</i>	American badger	None	None	Badgers measure 520 to 875 mm from head to tail, with the tail making up only 100 to 155 mm of this length. Badgers weigh 4 to	Alkali marsh, Alkali playa, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Meadow & seep, Mojavean	None observed;. No mounds are present .

EEC ORIGINAL PKG

Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
				12 kg. The body is flattened, and the legs are short and stocky.	desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland	
<i>Toxostoma crissale</i>	Crissal thrasher	None	None	The bird grows to 32 centimetres (13 in), and has a deeply curved bill. The eyes are dull yellow.	Riparian woodland	None observed; no woodlands present
<i>Toxostoma lecontei</i>	Le Conte's thrasher	None	None	LeConte's thrasher weighs from 55 to 75 g (1.9 to 2.6 oz) and are 24.5–29 cm (9.6–11.4 in), and there is no sexual dimorphism within the species. Their wings are typical of birds that are sedentary, as they are short and rounded.	Desert wash, Mojavean desert scrub, Sonoran desert scrub	None observed; no desert habitat.

EEC ORIGINAL PKG

Scientific Name	Common Name	Federal Status	State Status	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION /SITE POTENTIAL
<i>Xyrauchen texanus</i>	razorback sucker	Endangered	Endangered	One of the largest suckers in North America, the razorback sucker can grow to more than three feet (one meter) in length, though most are smaller.	Aquatic, Colorado River basin flowing waters	No habitat; no large surface of water
<i>Astragalus sabulorum</i>	gravel milk-vetch	None	None	This is a hairy annual herb with stems up to about 26 centimeters long.	Desert dunes, Mojavean desert scrub, Sonoran desert scrub	None observed; no desert habitat.
<i>Charadrius montanus</i>	mountain plover	None	None	The Mountain Plover is about the size of a Killdeer ( <i>Charadrius vociferus</i> ) but with longer legs and more erect posture.	Chenopod scrub, Valley & foothill grassland	None observed; could use during migration
<i>Charadrius nivosus nivosus</i>	western snowy plover	Threatened	None	Western snowy plovers are experts at blending into their environment. Plovers are shades of tan, brown and black with white underbellies and collar as well as dark tan legs.	Great Basin standing waters, Sand shore, Wetland	Not observed; no water habitat

EEC ORIGINAL PKG

Special Status Species that Occur in Imperial County (USFWS)

Common Name <i>Scientific Name</i>	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
<b>Plants</b>				
Peirson's milk-vetch <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	T/E/1B	Silvery, short-lived perennial plant that is somewhat broom like in appearance. A member of the pea and bean family, it can grow to 2.5 feet tall and is notable among milkvetches for its greatly reduced leaves. Peirson's milkvetch produces attractive, small purple flowers, generally in March or April, with 10 to 17 flowers per stalk. It yields inflated fruit similar to yellow-green pea pods with triangular beaks.	Desert dune habitats. In California, known from sand dunes in the Algodones Dunes system of Imperial County. Was known historically from Borrego Valley in San Diego County and at a site southwest of the Salton Sea in Imperial County	None observed. No dune habitat
<b>Birds</b>				
California brown pelican <i>Pelecanus occidentalis</i> No longer endangered	E/E/-	Large size and brown color. Adults weigh approximately 9 pounds, and have a wingspan of over 6 feet. They have long, dark	Open water, estuaries, beaches; roosts on various structures, such as pilings, boat docks,	None observed. No open water

Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	E/-/-	<p>bills with big pouches for catching and holding fish. Pelicans breed in nesting colonies on islands without mammal predators. Roosting and loafing sites provide important resting habitat for breeding and non-breeding birds.</p> <p>Small; usually a little less than 6 inches in length, including tail. Conspicuous light-colored wingbars. Lacks the conspicuous pale eye-ring of many similar <i>Empidonax</i> species. Overall, body brownish-olive to gray-green above. Throat whitish, breast pale olive, and belly yellowish. Bill relatively large; lower mandible completely pale. The breeding range of <i>extimus</i> includes Arizona and adjacent</p>	<p>breakwaters, and mudflats</p> <p>At low elevations, breeds principally in dense willow, cottonwood, and tamarisk thickets and in woodlands, along streams and rivers. Migrants may occur more widely. Prefers riparian willow/cottonwood but will use salt cedar thickets</p>	<p>None Observed</p> <p>No salt cedar thickets (salt cedar sparse) with running water found on site</p>

Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	E/T/-	states. A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts. Very shy.	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer..	None observed or heard; no suitable habitat; not immediately adjacent to Salton Sea.
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C/E/-	Medium-sized cuckoo with gray-brown upperparts and white underparts. Eye-rings are pale yellow. Bill is mostly yellow. Wings are gray-brown with rufous primaries. Tail is long and has white-spotted black edges. Sexes are similar.	Found in forest and open woodlands, especially in areas with dense undergrowth, such as parks, riparian woodlands, and thickets	None observed; no habitat on site. No thickets are present.
Bald eagle	T, PD/E/-	The distinctive white head and	Found on shores, lake	



Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
<i>Haliaeetus leucocephalus</i>		tail feathers yellow. Beak and eyes are about 29 inches long, can weigh 7 to 15 pounds, and have a wing span of 6 to 8 feet.	margins, and near large trees. Nests in large reservoirs, river systems, and some rangelands and coastal wetlands (breeding range is mainly in mountainous habitats near reservoirs, lakes and rivers, mainly in the northern two-thirds of California)	None observed; no habitat
Least tern <i>Sterna antillarum</i>	E/E/-	Small tern. During breeding, black cap ending at white forehead. Short white eyestripe. Bill yellow with black tip. Back light gray. Underside white. Black leading edge to wing. In nonbreeding plumage has black eyestripe extending to back of head, white top of head, and black bill. Size: 21-23 cm (8-9 in) Wingspan: 48-53 cm (19-21 in)	Shallow areas of estuaries, lagoons, and at the joining points between rivers and estuaries	None observed; no habitat

Common Name <i>Scientific Name</i>	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
		Weight: 30-45 g (1.06-1.59 ounces)		
Least Bell's Vireo <i>Vireo bellii pusillus</i>	E/E/-	Drab gray to green above and white to yellow below. It has a faint white eyering and two pale wingbars; has pale whitish cheeks and forehead and greenish wings and tail. longer tail and subtle wingbars. The song is a varied sequence of sharp, slurred phrases that typically end with an ascending or descending note.	Formerly a common and widespread summer resident below about 2,000 feet in western Sierra Nevada. Also was common in coastal southern California, from Santa Barbara County south, below about 4,000 feet east of the Sierra Nevada. Prefers thickets of willow, and other low shrubs afford nesting and roosting cover	None observed; no habitat on site. No thickets are present on site.
Mountain plover <i>Charadrius montanus</i>	FPT/SC/-	Medium-sized plover with pale brown upperparts, white underparts, and brown sides. Head has brown cap, white face, and dark eyestripe. Upperwings	Avoids high and dense cover. Uses open grass plains, plowed fields with little vegetation, and open sagebrush areas.	None observed; no habitat on site; could use during

Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG/ CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Black rail <i>Laterallus jamaicensis coturniculus</i>	-T/-	<p>are brown with black edges and white bars; underwings are white. Tail is brown-black with white edges. Sexes are similar.</p> <p>The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.</p>	<p>Likes to follow livestock grazing or burned off fields.</p> <p>Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with</p>	<p>migration.</p> <p>None observed; no habitat</p>

Common Name <i>Scientific Name</i>	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
			considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	

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Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
<b>Raptors</b> Peregrine Falcon <i>Falco peregrinus</i>	D/E/-	Large, powerful falcon; pointed winged falcon silhouette. Strong shallow wingbeats may dive at speeds up to 100 mph. Dark with dark hooded effect. Blue gray below with narrow bars	Most often found along coastlines or marshy habitats. Nest in cliffs and have been known to nest in tall buildings	None observed; rare visitors to area outside of the Salton Sea. No waterfowl for prey or cliffs/tall buildings for nesting
Northern Harrier <i>Circus cyaneus</i>	-/SC/-	Long-winged, long tailed hawk. Habitually flies low over open fields and marshes watching and listening for prey such as rodents and birds. (1 observed Harrier with a white faced ibis as prey). Perches low or on ground. Low slow flight. Nests in reeds. Grey with black wingtips.	Marshes, open fields. Nests in reeds	Observed on site Low rodent, rabbit populations. No nesting habitat

Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Sharp-shinned Hawk <i>Accipiter striatus</i>	-/SC/-	Blue gray above pale reddish below; small size. Tip of tail squared off. Nesting occurs in dense tree stands which are cool, moist, well shaded and usually near water. Hunt in openings at the edges of woodlands and also brushy pastures.	Sharp-shinned hawks may appear in woodland habitats during winter and migration periods and are often common in southern California in the coastal lowlands and desert areas; winters in woodlands and other habitats except alpine, open prairie and bare desert	Low rodent, rabbit populations. Not observed
White tailed Kite <i>Elanus leucurus</i>		Gray and white with black on shoulders and under bend of wing. Graceful flyer. Adults have bright red eyes. Medium size hawk; about 15 inches long and about 12 ounces.  Males pale with with rufous shoulders and thigh feathers.	Found in open country; like to perch on treetop. May be seen hovering prior to attack of a rodent.	Low rodent, rabbit populations. Not observed



Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG/ CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Jaguar <i>Panthera onca</i>	-/-/-	weigh between 180 and 240 pounds, Typically yellow-brown with black spots, called rosettes, but they can also be black with black spots. They are nocturnal and have a keen sense of smell and hearing. Excellent swimmers, tree climbers, and move easily on the ground.	Occurs in tropical rainforests, arid scrub, and wet grasslands. Prefers dense forests or swamps with a ready supply of water	None observed; no habitat
<b>Reptiles and Amphibians</b> Desert tortoise <i>Gopherus agassizii</i>	T/T/-	A herbivore that may attain a length of 9 to 15 inches in upper shell (carapace) length. The tortoise is able to live where ground temperature may exceed 140 degrees F because of its ability to dig underground burrows and escape the heat. At least 95% of its life is spent in burrows. Their shells are high-domed, and greenish-tan to dark	Dry, flat, and gravelly or sandy ground in desert shrub communities where annual and perennial grasses are abundant. Frequent habitats with a mix of shrubs, forbs, and grasses	None observed; habitat not favorable



Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
		brown in color. Desert tortoises can grow from 4–6" in height and weigh 8–15 lb (4–7 kg) when fully grown. The front limbs have heavy, claw-like scales and are flattened for digging. Back legs are more stumpy and elephantine		
Flat-tailed horn lizard <i>Phrynosoma mcallii</i>	PT/-/-	Closely related to Desert horned lizard (scat indistinguishable); only found in Imperial, Riverside County, Ca and Yuma area, Az. Small round lizard with distinguishing round spots on back. Diet of ants; needs sandy soil, shade bushes to survive.	Desert washes/sandy areas with vegetative cover. Diet of ants	No habitat; none observed
Fish				
Desert pupfish <i>Cyprinodon macularius</i>	E/E/-	Small, silvery-colored fish with 6 to 9 dark bands on its sides. Grows to a full average length of only 2.5 inches; develop quickly,	Springs, seeps, and slow-moving streams in Salton Sink basin and backwaters and sloughs	None observed; no habitat

Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG/ CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Razorback Sucker <i>Xyrauchen texanus</i>	Fed/CA: Endangere d	<p>sometimes reaching full maturity within 2 to 3 months. Although their average life span is 6 to 9 months, some survive more than one year.</p> <p>Pupfish have a short, scaled head with an upturned mouth. The anal and dorsal fins are rounded with the dorsal sometimes exhibiting a dark blotch. The caudal fin is convex at the rear.</p> <p>One of the largest suckers in North America, can grow to up to 13 pounds and lengths exceeding 3 feet. The razorback is brownish-green with a yellow to white-colored belly and has an abrupt, bony hump on its back shaped like an upside-down boat keel</p>	Colorado River	None observed; no habitat

Common Name Scientific Name	Status <sup>1</sup> Federal/CD FG / CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
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Sources: CDFG/CNDDDB 2024, California Wildlife 2024; CNPS 2024; USFWS, 2024

<sup>1</sup>Status: Federal:

E = Listed as an endangered species

T = Listed as a threatened species

C = Candidate for listing

D = Delisted

PD = Proposed for delisting/PT = Proposed for threatened status

State/CDFG:

E = Listed as an endangered species; or previously known as "rare, fully protected"

T = Listed as a threatened species

SC = species of special concern (designation intended for use as a management tool and for information; species of special concern have no legal status ([www.dfg.ca.gov/wildlife/species/ssc/birds.html](http://www.dfg.ca.gov/wildlife/species/ssc/birds.html)))

CNPS (California Native Plant Society):

1B = Rare, threatened, or endangered in California or elsewhere

2 = Plants rare, threatened, or endangered in Ca, but more common elsewhere

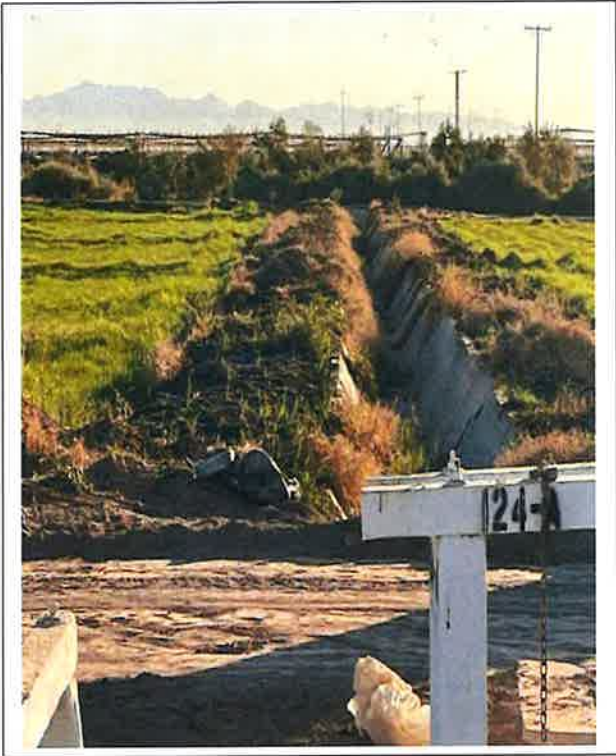
3 = Plants about which more information is needed

Habitat Suitability Codes: H = Habitat is of high suitability for this species M = Habitat is of moderate suitability for this species L

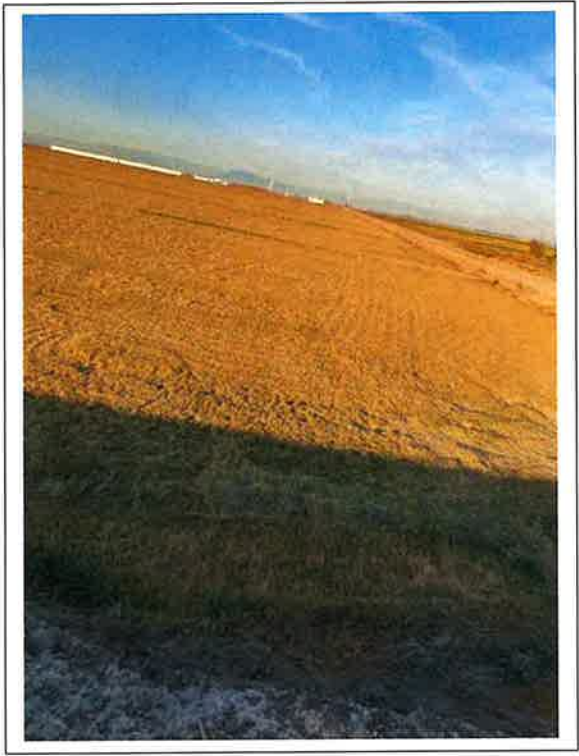
= Habitat is of low suitability for this species

**APPENDIX B  
PHOTOGRAPHS**

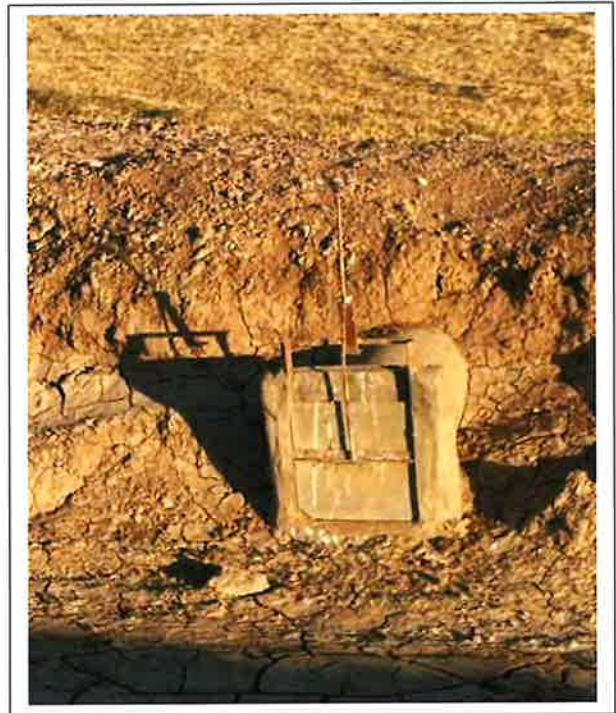
PHOTOGRAPHS



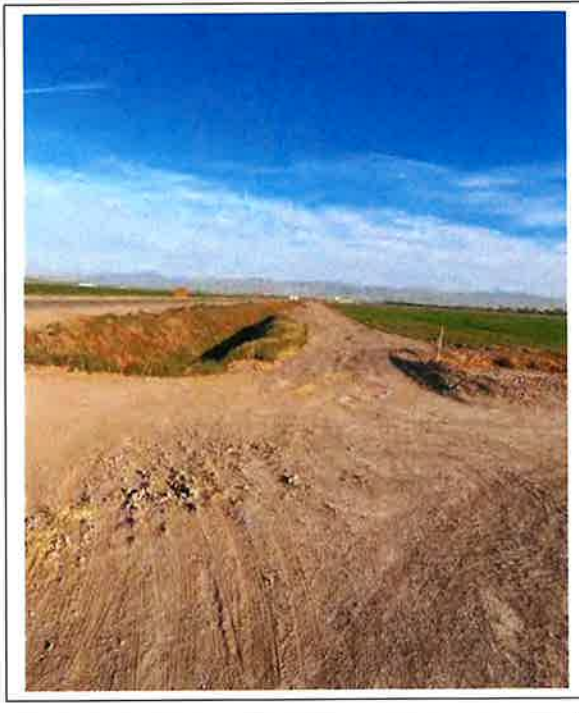
1. Facing east from SE corner; north and south blocks of Bermuda field. IID Vail 1 gate 124A



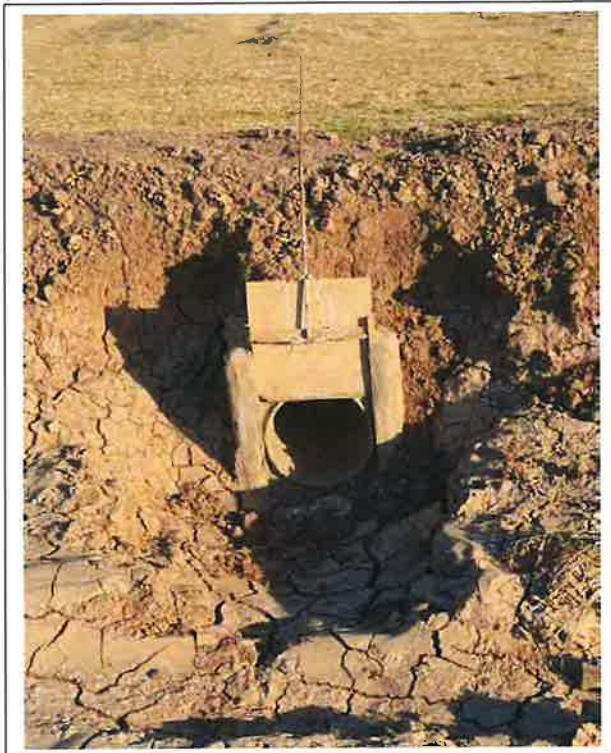
2. Agricultural field with haystacks in background



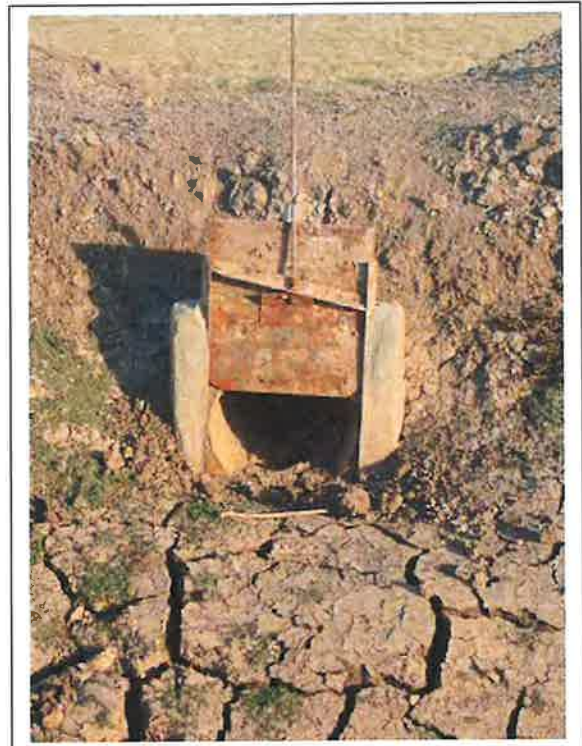
3. Field irrigation pipe being used as BUOW perch #4 on Bioresource Map



4. Facing north from SW corner Mail Drain to left; field to right



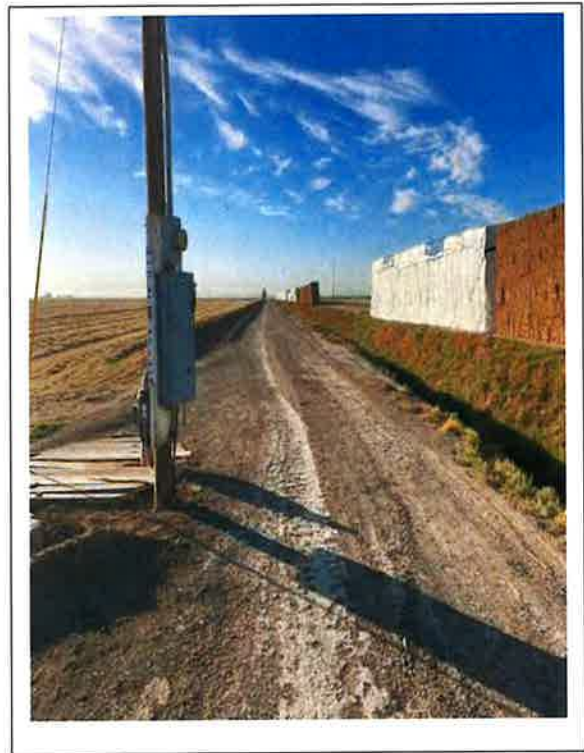
5. BUOW shelter burrow #2 was located, white wash and pellets were observed at the opening of the irrigation pipe



6. Shelter burrow #3 is in concrete gate, white wash and pellet are visible.



7. BUOW from shelter #3



8. Facing south from NW corner; Vail drain and haystacks to right; field to left

APPENDIX C  
SPECIES FOUND ONSITE  
AND VICINITY

ZOOLOGICAL SPECIES OBSERVED ON OR NEAR SITE		
Common name	Scientific name	
<b>Birds</b>		<b>Onsite/offsite</b>
Black phoebe	<i>Sayornis nigricans</i>	Nests around water; concrete checks in canals; no nesting areas on site
Burrowing owl	<i>Athene cunicularia</i>	Onsite 70% of CA BUOW population found in Imperial County. BUOW found on site outside of 250 foot buffer zone.
Killdeer	<i>Charadrius vociferus</i>	Offsite; Habitat open, with sparse or no vegetative cover, or short (mowed) grass; mudflats; shallow water; habitat not found onsite
Loggerhead shrike	<i>Lanius ludovicianus</i>	Offsite; nests low in a dense, often thorny, tree or shrub preys on small mammals, lizards. No nesting areas on site
Mourning dove	<i>Zenaida macroura</i>	Onsite; feeds on seeds, berries and termites. Seed crops not grown in this area; not expected in large numbers; no nesting areas onsite



<b>ZOOLOGICAL SPECIES OBSERVED ON OR NEAR SITE</b>		
<b>Common name</b>	<b>Scientific name</b>	
Northern Harrier	<i>Circus hudsonius</i>	Offsite, Lives in marshes or fields. Eats amphibians, birds, insects, mammals, and reptiles. Nests in marshy areas; no nesting sites available
Western Kingbird	<i>Tyrannus verticalis</i>	Offsite; may forage on site; Nests in trees or shrubs, usually on horizontal branch or crotch of upward slanting branch, well within canopy which are not found on site
Western meadowlark	<i>Sturnella neglecta</i>	Onsite; may forage on site; Female locates nest in pasture, prairie, or other grassland habitat; rarely in cultivated fields
White wing dove	<i>Zenaida asiatica</i>	Onsite. Nest in shrubs and trees, no nesting habitat available. Eats grains, seeds and fruits
Bees	<i>Apis sp.</i>	Onsite
<b>Mammals</b>		<b>Onsite/offsite</b>
Coyote	<i>Canis latrans</i>	Offsite
Gopher	<i>Thomomys bottae</i>	Onsite

BOTANICAL SPECIES OBSERVED ON OR NEAR SITE			
Common name	Scientific name	BUOW Forage	CNPS Classification
Bermuda grass	<i>Cynodon dactylon</i>	Yes	None
Nettle-leaved Goosefoot	<i>Chenopodiastrum murale</i>	No	None
Saltcedar	<i>Tamarix spp.</i>	No	Ca Noxious Weed Cal-IPC rating: High *
Residential trees/vegetation (offsite)	<i>Various (Ca fan palm)</i>	No	None

\*High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

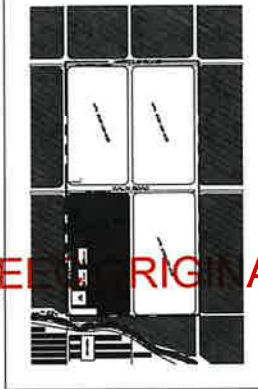
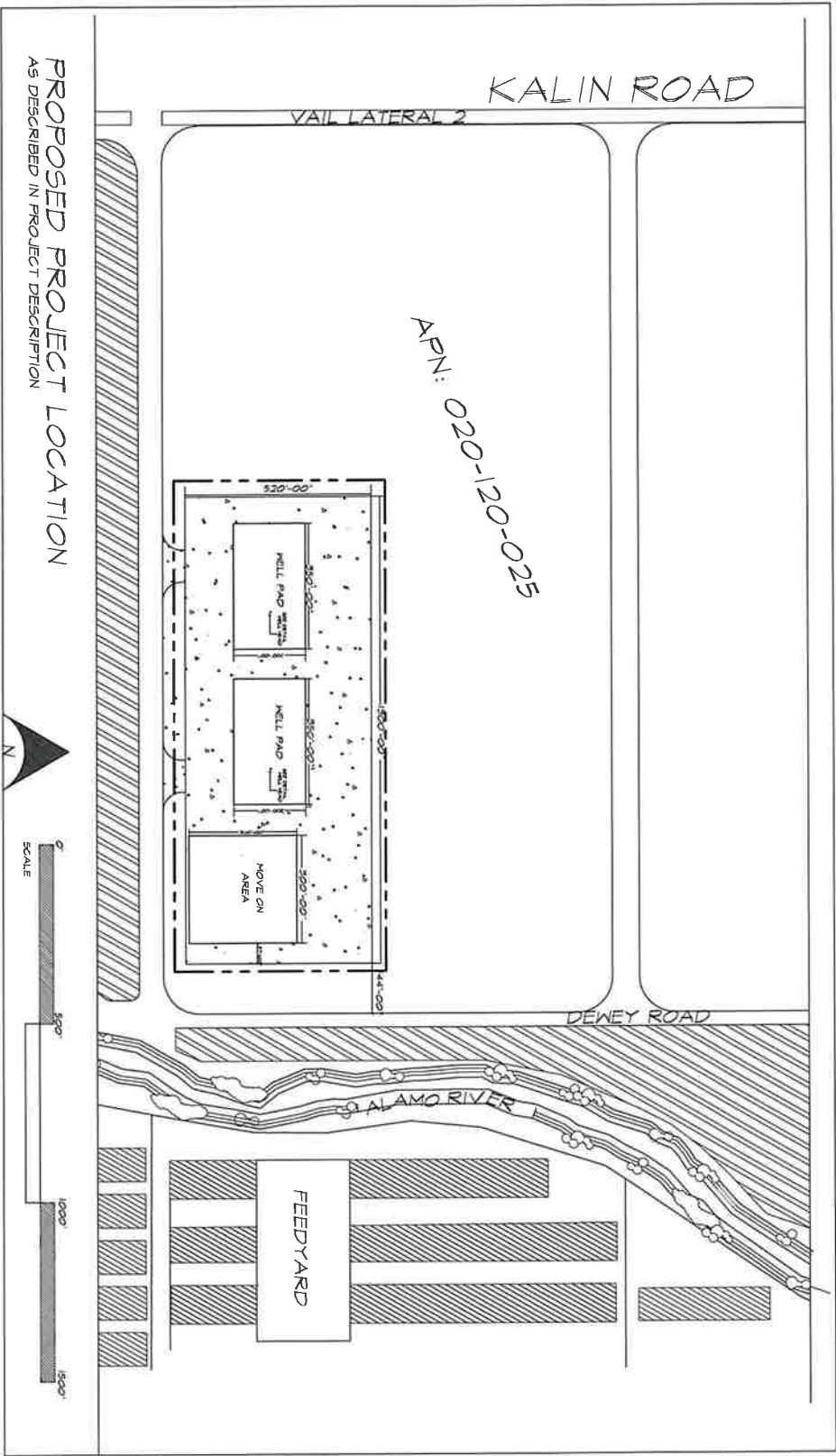
Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

APPENDIX D  
MAPS



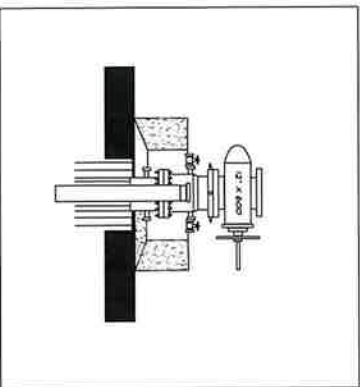
**GLEC DRILL SITE**  
Biological Resources Map

REC ORIGINAL PKG



PROPOSED PROJECT OVERALL SITE  
APN: 020-120-025

FIELD ORIGINAL PKG



WELL HEAD TYPE  
AS DESCRIBED IN PROJECT DESCRIPTION

**APPENDIX E  
ALTERNATE  
BUOW SURVEY  
PROTOCOL**

REVISED BUOW SURVEY PROTOCOL

As mentioned in Staff Report on Burrowing Owl Mitigation Appendix D Breeding and Non-breeding Season Surveys and Reports, the following *Alternative Methods*, is defined.

The proposed project, Global Lithium Energy Corporation’s well pad project will be of short duration of up to 90 days and limited to 17 acres. After determination of presence/absence of geothermal resources, the well pad will either be removed and returned to agricultural production or if resources are found, well pad activities will be ceased and project permitting for a geothermal plant and additional well activities will be commenced.

A Habitat Assessment Survey of an area of 160 acres was completed on December 3, 2024. The survey found the following:

Location	Description	Recommendations
1. Bioresources map #1 33°9'43.56/115°34'24.72"	BUOW perch 2100 feet North of drilling well site; whitewash, pellets	Monitor during drilling
2. Bioresources map #2 33°9'18.0/115°34'32.7"	One BUOW using irrigation pipe as a shelter 277 feet west of drilling well site, whitewash. Not a nesting burrow	Shelter with strawbales and monitor during drilling
3. Bioresources map #3 33°9'17.7/115°34'41.16"	One BUOW using irrigation pipe as a shelter 995 feet west of drilling well site; whitewash, pellets. Not a nesting burrow	Monitor during drilling
4. Bioresources map #4 33°9'30.61/115°34'25.53"	Perch with whitewash; no BUOW 799 feet north of drilling well site	Monitor during drilling
5. Various	Various Avian sightings documented in Appendix C	Preconstruction nesting surveys

No active or surrogate burrows were found; the closest BUOW shelter was found 277 feet west of the well pad. The pipe would not serve as a nesting burrow as during irrigation events, water would flow through the pipe and remove BUOW presence.

No round tailed ground squirrels, that could potentially provide a “start” for BUOW burrows, were observed; local occurrences of BUOW appear to be governed more by the suitability of burrow

sites (Coulombe, 1971). Bartok and Conway (2010) also found in their study that most of the BUOW in their study area nest within round-tailed ground squirrel (*Spermophilus tereticaudus*) burrows in the sides of the earthen trenches or under the edges of concrete trenches around the margins of the agricultural fields.

Columbe also found that “the number of active burrows remained essentially constant along the Dahlia drain canal through 1966 and 1967”. Columbe’s research found that active burrows in a designated area remained constant throughout the year. (Columbe, 1971).

Burrowing owl nest burrows are often distinctive, due to the species habit of lining the entrance and tunnel with cow manure (Green 1988), coyote dung, insect parts, cotton, dead toads, plastic, tin foil, and other rubbish (Rosenberg et al. 2007). No nesting burrows were found in the Habitat Assessment survey; therefore additional nesting is not expected on site/buffer zone as no nesting burrows were found and round tailed ground squirrels were not present to present additional BUOW nesting opportunities. The BUOWs found during the survey were offsite and either perching or sheltering in irrigation pipes. No round tailed ground squirrels were observed that would provide nesting opportunities.

As a result of these observations, three additional breeding site visits would not be productive. As this project is short termed and limited to a small area, a take avoidance survey within 30 days of ground disturbance and 24 hours prior to start of project would be sufficient to protect the BUOW.

If additional BUOW are found during these surveys, CDFW will be consulted.



## References

- Bartok, Nickolas D. and Courtney J. Conway, 2010. *Factors Affecting The Presence Of Nesting Burrowing Owls In An Agricultural Landscape*, *J. Raptor Res.* 44(4):286–293.
- Coulombe, Harry N., 1971. *Behavior And Population Ecology Of The Burrowing Owl, Speotyto Cunicularia, In The Imperial Valley Of California*, Department of Zoology 1971 University of California, Los Angeles, California 90024.
- Green, G. A., and R. G. Anthony. 1989. *Nesting success and habitat relationships of burrowing owls in the Columbia Basin, Oregon*. *Condor* 91:347-35
- Rosenberg, D. K., and J. A. Gervais. 2009. *Burrowing Owl Population Assessment at Naval Air Station Lemoore*. Oregon Wildlife Institute Contribution No. 200, Unpubl report to Naval Facilities Engineering Command. Southwest, San Diego, CA.
- Rosenberg, D. K., L. A. Trulio, D. Catlin, D. Chromczak, J. A. Gervais, N. Ronan, and K. A. Haley. 2007. *Ecology of the burrowing owl in California: a synthesis of demographic and space use studies*. Report to Bureau of Land Management.

APPENDIX F  
QUALIFICATIONS

## GLENNA MARIE BARRETT

PO Box 636 Imperial, California 92251 (760) 425-0688  
glennabarrett@outlook.com

### PROFILE

Organized and focused individual, adept at implementing multifaceted projects while working alone or as an integral part of a team. Skilled in client/employee communications, report preparation, program analyses and development. Cost conscious, safety oriented and empathetic. A strong communicator with excellent interpersonal skills, which allows development of rapport with individuals on all levels. A sound professional attitude, strong work ethic and pride in personal performance.

### WORK EXPERIENCE

**Senior Biologist Barrett's Biological Surveys**, Imperial County, CA April 2016-currently.

Principal Biological Consultant, Barrett Enterprises. Imperial, CA December 2001 - currently. Compile information and complete local, state, and federal government forms; such as conditional use permits, reclamation plan applications, Financial Assurance Cost Estimates, zone changes, CEQA, Environmental Evaluation Committee responses, and 501 (c)(3) tax exemption applications. Act as liaison between local businesses and local, state, and federal government agencies. Certified to survey for Flat-Tailed Horned Lizards in California and Arizona. Certified to survey for the Desert Tortoise.

**Kruger- Environmental Compliance Coordinator (ECC) for Seville Solar Complex** for a 626-acre solar farm in Imperial County, CA. Compiled and submitted data and reports for APCD such as equipment lists and man hours, water hours for dust suppression; Planning reports such as weekly monitoring reports and scheduling with the third party monitor for work on BLM land; Assisted in writing the Emergency Response Action Plan; CDFW quarterly reports for the Incidental Take Permit for the Flat Tail Horned Lizard (FTHL), CNDDDB reports, FTHL Observation Data Sheets, site tours and any other information required by CDFW; Agriculture Commissioner's Office quarterly reports; provided the hazardous reporting information for the CERS online reporting system; assisted writing the FTHL ITP; trained new hires; contacted various local businesses for different on-call services; also provided any updates for plans and schedules necessary throughout the life of the project; etc. (January 2015- March 2016).

**Grant writing experience:** Awarded two grants for BUOW educational programs for \$15,000 each from Imperial Valley Community Foundation. Awarded \$35,700 for a total of \$75,000 with matching funds to establish the Imperial Valley Small Business Development Center with the Imperial Regional Alliance. Awarded \$450,000 from the California Public Utilities Commission for a broadband connectivity initiative in Imperial County with Imperial Regional Alliance and Imperial Valley Economic Development Corporation (IVEDC).

### FIELD EXPERIENCE

Ms. Barrett has done the field work and contributed to the required reports for the following projects:

- **8ME-Burrowing Owl/MBTA/Avian Mortality Monitoring and training for the Mount Signal Solar Projects** in Calexico, CA (April 2010-2022)
- **Salton Sea Species Conservation Habitat Project** - Imperial County, CA: Nov 2020 -July 2022 monitoring construction for desert pupfish, Ridgway Rails and other species. Found both species on site and consulted with agencies for protective measures.
- **Burrtec- FTHL/MBTA Surveys** in Salton City, CA: Team leader for eight people to complete a pre-construction site sweep for 320 acres in Imperial County. 2014-2022
- **Applied Biological Consulting- Approved Biological Monitor on DPV2:** The 500kV transmission line traverses approximately 153 mi from Bythe, CA to Menifee in Riverside County, CA. Crossing private, state and Federal lands, such as the Bureau of Land Management [BLM],

U.S. Forest Service [USFS]. Desert tortoise, nesting birds, fringe toed lizard, flat tailed lizard (November 2011 to May 31, 2013)

- **Chandi Group**, Conduct Habitat Assessment Survey (as outlined in Western Riverside Multispecies Habitat Conservation Plan: Burrowing Owl/Narrow Endemic Species) within the City of Jurupa Valley, Riverside County, 2015

#### **EDUCATION AND TRAINING**

Received Bachelor of Science in Business Administration with a focus on Management, along with Economics and Leadership minors, December 2000. Humboldt State University, Arcata, CA.

Special Status/listed species observed/ identified, surveyed, monitored and/or relocated: Mohave desert tortoise, Coachella valley milkvetch, Desert kit fox, Mountain lion, Coachella valley fringe toed lizard, Mohave fringe toed lizard, Stephen's kangaroo rat, Mohave ground squirrel, Coast horned lizard, Flat-Tail Horned lizard, Burrowing Owl.

Extensive knowledge in southwestern United States, non-migratory and migratory avian biology and ecology. Strong knowledge of common Flora and Fauna communities associated with Southern California and surrounding environs. CEQA, NEPA, California Endangered Species Act (CESA) and Federal Endangered Species Act (ESA) knowledge gained through work experience. I have excellent analytical skills, multi-tasking and writing abilities. My past work experience has provided me with many years of hands on experience working with and managing others to find practical solutions to solve problems and achieve common goals.

#### **CERTIFICATIONS/ WORKSHOPS**

- Desert Pupfish Training CA Department of Fish and Wildlife Sharon Keeney, Summer/Fall 2019-21
- Introduction to Plant Identification CA Native Plant Society June. 2019
- FTHL Workshop, 2008 El Centro BLM office.
- Yuma Clapper Rail Training Colorado River Yuma Bird Festival AZ Game and Fish 2008
- USFW Desert Tortoise Egg Handling Desert Tortoise Council Survey Techniques Workshop Certificate, 2008 and 2010.
- Anza Borrego State Park Wildflower Identification Workshop, 2010.
- Southwest Willow Flycatcher Workshop Kernville, CA, 2010.
- SCE TRTP Construction Monitoring Training Class and WEAP Redlands, CA 2011.
- DPV2 Construction Monitoring Training Class and WEAP Santa Ana, CA 2011.
- Helicopter flight trained on DPV2, 2012.
- Certified to handle/ move venomous snakes on DPV2, 2012.
- Bat monitoring with Ms. Pat Brown BLM El Centro, CA Office, 2010.
- Salton Sea International Bird Festival 2007 Coordinator
- Mountain Plover/ Long-billed Curlew surveys, L.A. Museum of Natural History
- Presented at the Fourth Annual BUOW Symposium in Pasco, Washington, 2014.
- Board Member- Colorado River Citizens Forum, 2014-2016.
- BUOW Educational outreach grantee from IVCF, interacting with IID, IVROP, ICFB, Ag Commissioner's Office, 2015.
- Friends of the Sonny Bono National Wildlife Refuge, Member 2015

**Jacob Calanno**  
Post Office Box 458  
Niland, California 92257  
760-550-4214

**SPECIALTIES:** Biological Surveys and Monitoring, Mechanical Process Applications, Field operations.

**EDUCATION:** Imperial Valley College, Imperial, Ca. - Municipal Water and Waste Water Treatment; Licensing pending.

**COMPUTER**

**SKILLS:** Basic computer skills, Lab View for Engineers.

**CERTIFIED**

**SPECIALIZED**

**TRAINING:** Environmental Review & Compliance for Natural Gas Facilities Seminar- June 5-7, 2012  
Desert tortoise Surveying, Monitoring and Handling Techniques Certificate Nov. 5-6, 2012  
Flat Tail Horn Lizard Training- June 20, 2012  
Introduction to Plant Identification, CA Native Plant Society, June, 2019  
Desert Pupfish Training CA Department of Fish and Wildlife, Sharon Keeney, Summer Fall 2019  
40 Hour Hazwoper Feb. 8, 2013  
CALIFORNIA OSHA TITLE-2011  
Confine Space Training, 2005  
Lockout/Tagout , 2005  
Respirator Training, 2005  
Operators Safety Training, 2005  
Foreman Field Crew Supervisory and Operations Training, 2005

**SUMMARY:** Biological surveyor and Monitor/ Field Operations Crew Foreman/Operations Technician

For the past ten years I have been specifically working on biological surveys and monitoring including burrowing owl, flat tail horned lizard, desert tortoise and migratory birds. I have 15 years' experience in the environmental remediation industry. My area of expertise is in biological monitoring, remedial mechanical applications, equipment, operations and maintenance programs.

Training and hands on experience working in the field with endangered species:

Desert Tortoise and the Flat Tail Horned Lizard, Desert Pupfish, Ridgway Rail followed compliance policy and procedure when encountering endangered species. This training was received while working on specific projects such as:

**WORK EXPERIENCE:**

2012-18 Barrett's Biological Surveys  
Salton Sea Species Conservation Habitat Project: Imperial, CA: Nov 2020 -current monitoring construction for desert pupfish, Ridgway Rails and other species. Found both species on site and consulted with agencies for protective measures. 8 hrs/day/5 days per week  
Project Salton City Burrtec Landfill: 320 acre clearance and provided FTHL training to construction crew(42 hrs)  
Project AECOM/IID Burrowing Owl habitat surveys June, 2015  
Project Imperial County Public Works Desert Tortoise/MBTA monitoring: 195.7 hours at Walters Camp, near Palo Verde, CA  
Project Mesquite Mine: 30 acre desert tortoise clearance; fence installation monitoring (25 hrs)  
Project Oat Mine: FTHL monitoring (186 hrs)  
Project CalTrans: FTHL monitoring (50 hrs)  
Project: Arms and Dudes Film Project FTHL/MBTA monitoring (181 hours)  
Project Niland Wastewater Project BUOW/Biological surveys (5 days)

Project: Hell's Kitchen MBTA Nesting Bird/Burrowing Owl Surveys (5 days)  
BLM, El Centro, CA office: Volunteer Bat Surveys with Pat Brown (20 hours)  
CDFW, Avian Carcass Collection Volunteer (5 hours)

2005 to 2010 Volper, LLC, Burbank, Ca.

Provided field supervision of construction  
Responsibilities include plan and coordinate field construction and activities,  
field reports and tracking hours.  
Manager/Grower

2003 to 2005 Cape Environmental, Irvine, California

Field Operations Supervisor/Sr. Operations Technician  
Provided technical equipment applications support on various environmental  
remediation projects.  
Responsibilities included; construction, planning and field supervision for the  
installation, operation and maintenance of ground water remediation equipment.

2000 to 2003 Foster Wheeler Environmental, San Diego, California

Field Operation Supervisor/Sr. Operations Technician  
Provided technical equipment applications support on various environmental  
remediation projects.  
Responsibilities included; construction, planning and field supervision for the  
installation, operation and maintenance of ground water remediation  
equipment.

REFERENCES:

Mr. Fredrick Rivera  
IR Manager,  
Naval Air Facility - El Centro  
760-339-2226

Marie Barrett  
2035 Forrester Rd  
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760 427 7006

Ed Cooney  
Engineering Technician  
FEAD/PW Bldg.504 NAF El Centro, CA 92243  
760-339-2469