



Imperial County Planning & Development Services Planning / Building

Jim Minnick
DIRECTOR

April 03, 2023

Subject: Request for Proposal - Environmental Impact Report (EIR) for a Solar Energy Project (North-Star 2)

Project Applicant: Apex Energy Solutions, LLC

- General Plan Amendment
- CUP #22-0030
- IS #22-0049
- ZC #22-0007

Dear Consultant:

The Imperial County Planning & Development Services Department is soliciting proposals for the preparation of a comprehensive Environmental Impact Report (EIR) for the NorthStar 2 solar and battery storage Project, which includes Water Supply Assessment (WSA), one (1) Zone Change, (2) Conditional Use Permits (CUP) and an Initial Study (IS). The Planning & Development Services Department will act as the "Lead Agency" for the preparation of the EIR pursuant to the California Environmental Quality Act (CEQA). The successful consultant will work directly for the County Planning & Development Services Director in the preparation of the Draft and Final EIR.

The NorthStar 2 Solar & Battery Project includes:

1. One (1) Conditional Use Permit CUP #22-0030 to allow for the construction and operation of a 130-megawatt (MW) alternating current (AC) solar photovoltaic (PV) energy generation and 175MW megawatt hour (MWh) battery storage project. The Project is to be located on approximately a 460 acre parcel and 154- acre parcel;
2. One (1) Conditional Use Permit to allow the construction and operation of a commercial/industrial water well for on-site operations during construction and maintenance purposes.

Attached is a copy of the application package.

- I. The County hereby requests the following information; for each item (as appropriate), the hourly rate and estimated total hours for the specific task must be documented.
 - a. Identified milestones representing specific tangible work products (tasks) to which payments by the County would be linked and become part of the legal contract. (Please note that all subsequent bills/invoices will be required to include both the identified milestones and percent completed).
 - b. All potential subcontractor(s) that will be utilized along with their estimated staff time and cost breakdown;
 - c. An estimated "not to exceed cost" to prepare the Drafts (DEIR) and Final Environmental (FEIR) documents;
 - d. Review the attached proposed application and make findings of consistency with the *Imperial County General Plan Renewable and Transmission Element*; and

- e. An electronic version (i.e. thumb drive or CD) of all documents prepared by the prime CEQA consultant and potential subcontractor(s).

The only exception to the "not to exceed" cost shall be the response to public comments received as a result of the joint environmental document's circulation

If the County receives excessive comments on the draft document, then the costs will be determined on a "negotiated basis" when the draft document and comments on the project become available. Excessive comments are generally considered to be more than twenty (20) commenting agencies/individuals and/or over 150 comments that require answers other than "comment noted."

The proposal must incorporate the cost estimate for the printing of **five (5) hard copies of the Administrative Draft EIR, five (5) hard copies of the Draft EIR and five (5) hard copies of the Final EIR, along with the creation of 50 CD's** of the aforementioned environmental documents, as determined. Also, the proposal must provide a cost estimate for each additional hard copy and/or CD, if additional copies are needed.

The proposal must provide that prior to any cost overruns; the consultant shall discuss first and then seek written approval from the County Planning and Development Services Director, Jim Minnick before such costs are incurred. Failure to get prior written approval may result in such costs being disallowed.

II. We request that you provide within your cost estimate for the EIR, including the hourly rate and total estimated hours, a preparation of the following studies and analysis.

- Aesthetics/Visual Impacts
- Air Quality/ Greenhouse Gas emissions (applicant submitted an Air Quality Report) –please provide third party review
- Transportation/Traffic
- Biology Resources
- Cultural Resources/Historical/Tribal Cultural/Archaeology
- Agriculture and Forest Resources
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise (applicant submitted a Noise Study) –please provide third party review
- Mineral Resources
- Population and Housing
- Public Health & Safety
- Public Services
- Recreation
- SB18/AB-52 Tribal Cultural Resources
- Utilities and Service Systems
- Energy
- Wildfire
- CEQA Findings for EIR
- Mitigation, Monitoring & Reporting Program (MM&RP)
- Visual 3D
- Hydrology and Water Quality
- Water Supply Assessment

It is expected that the applicant will be submitting the following documentation for review; we request that you provide within your estimate for the EIR the cost for the peer-review of this work and these studies, prepared by the applicant and their consultants.

- Air Quality and Greenhouse Gas
- Noise
- Land Evaluation and Site Assessment
- Phase I ESA
- Geotechnical Report

At the very least, you will be expected to review such outside studies as a third-party review and determine whether or not they are adequate, need to be revised, updated or, in fact, be reproduced. However, at this time, the applicant will not be submitting any studies.

III. The following format should be used in preparing the proposal, additional information/items may be used to further bolster your proposal:

One page cover letter introducing your firm.

1. Project Understanding

2. Project Team

- Identify all company and consultant team personnel who will work on the project and short description of their education and work experience.
- Resumes of the prime and technical consultants should be included and can be attached to the proposal as an appendix.
- Organization Charts-Elaborate organization charts are not necessary.

3. Scope of Work

- Describe the proposed tasks to accomplish the scope of work.
- Include deliverables, when applicable, for each task.
- Include all applicable site visits, scoping meetings, staff meetings and public hearings.
- Be specific regarding your approach to complete the CEQA noticing requirements.

4. The tasks should be presented as follows:

a. Project Initiation

Include research, site visit, data collection, CEQA notices, scoping meetings, etc;

b. Administrative Draft EIR

Include mandatory CEQA sections, required and technical studies, peer review of applicant-prepared technical studies, number of revisions, meetings and coordination with County Staff;

c. Public Review Draft EIR

Include document preparation, CEQA notice, Scoping meeting, and coordination with County Staff;

d. Final EIR

Include document preparation, Response to Comments, CEQA notice, meetings, coordination with County Staff and attendance at Planning Commission and Board of Supervisors hearing;

e. Mitigation, Monitoring and Reporting Program

Include the preparation per CEQA identification of all mitigation measures, identification of all responsible parties, timing and enforcement;

f. CEQA Findings and Notice of Determination

Include the preparation per CEQA requirements,

g. Assumptions

Please provide a specific section for assumptions. Include your assumptions regarding travel time, mileage, public noticing, or anything else that needs clarification; and

h. Meetings

The number of meetings and hearings that are included in your proposal should be detailed under each task.

5. Proposed Schedule

Provide the number of weeks for each task in tabular form from project initiation to public hearings, Planning Commission, and Board of Supervisors.

6. Cost Estimate/Milestones

- Provide a discussion of the proposed cost and any optional costs.
- Include a spread sheet that details your personnel, any subcontractors to be used, their estimated hours, and associated costs per task (can be attached as an appendix).
- A table of project milestones should be included in the Cost Estimate discussion.

7. Consultant Selection Criteria

- a) **Understanding of the project:** the proposer should demonstrate understanding of key elements of the project and, accordingly, provide the names of personnel and their expertise.
- b) **Approach to the project:** The selection process will evaluate the extent to which the proposer has recognized and identified special circumstances on the project and whether the proposer has provided logical approach to tasks and issues of the project.
- c) **Professional qualifications necessary for satisfactory performance:** The project manager and key team members should be qualified to perform the work categories on the project; and the proposer's knowledge of standards and procedures will be examined.
- d) **Specialized experience and technical competence in the type of work required:** The proposer should provide information about comparable projects they have been involved with and/or successfully accomplished; past performance on contracts with government agencies and private industry will be considered together with past performance evaluations; and the capacity to accomplish the work in the required time will also be evaluated.

III. **It is requested that you disclose any conflict or potential conflict that you may have if you are submitting a proposal. The conflict by the County envisions, at the very minimum, current/ongoing or previous contracts (within the past year) with the applicant(s); this also includes current technical studies that either are or have been prepared for the applicant(s) within the last year.**

IV. **Not providing the extent of information (including hourly rate and total estimated hours per task) may negatively impact the evaluation of your proposal.**

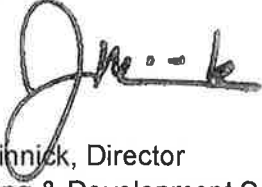
If you are interested in submitting a proposal, please submit it to the Director at Imperial County Planning & Development Services Department, 801 Main Street, El Centro, CA, 92243, **no later than May 03, 2023 at 5:00 p.m.** This must be postmarked or sent via facsimile on or before this date and time.

Please note that it is **not necessary to present us with voluminous references or individualized background data** on persons or personnel within your organization. We may require this at a later date. We look forward to receiving your RFP submittal.

Please submit a total of 2 hard copies and a CD.

Should you have any questions or comments, please contact the assigned Planner for this project, Gerardo Quero, Planner I at (442) 265-1736, extension 1748, or via-email at gerardoquero@co.imperial.ca.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Minnick". The signature is stylized with a large, looped initial "J" and a long horizontal stroke.

Jim Minnick, Director
Planning & Development Services Department

Attachments: NorthStar 2 Project Application Package

cc: Jurg Heuberger jurgheuberger@gmail.com
Jim Minnick, Director of Planning and Development Services
Michael Abraham, AICP, Asst. Director of Planning & Development Services
Diana Robinson, Planning Division Manager
Project File: CUP22-0030
APN 039-140-013-000, et. al.
Files: 10.101, 10.102, 10.105, 10.109, 10.110,

GQWMRS:\AllUsers\APN\039\140\013\CUP22-0030\PFR EIR\NorthStar 2 RFP EIR.docx

CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

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

1. PROPERTY OWNER'S NAME Apex Energy Solutions, LLC.	EMAIL ADDRESS c/o jurgheberger@gmail.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 604 Sutter St., Suite 250, Folsom, CA	ZIP CODE 95630	PHONE NUMBER c/o 760-996-0313
3. APPLICANT'S NAME Northstar 2	EMAIL ADDRESS	
4. MAILING ADDRESS (Street / P O Box, City, State) 604 Sutter St., Suite 250, Folsom, CA	ZIP CODE 95630	PHONE NUMBER
4. ENGINEER'S NAME NA	CA. LICENSE NO.	EMAIL ADDRESS NA
5. MAILING ADDRESS (Street / P O Box, City, State) NA	ZIP CODE	PHONE NUMBER

6. ASSESSOR'S PARCEL NO. 039-140-013 & 039-140-014	SIZE OF PROPERTY (in acres or square foot) 460 AC & 154 AC	ZONING (existing) S-2
7. PROPERTY (site) ADDRESS pending assignment by ICPDS		
8. GENERAL LOCATION (i.e. city, town, cross street) north of highway 78 east of the Highline Canal		
9. LEGAL DESCRIPTION see attached PTR		

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

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail)	
	develop a 130 MW PV solar field with a 175 MW BESS, see additional details attached
11. DESCRIBE CURRENT USE OF PROPERTY	vacant desert land
12. DESCRIBE PROPOSED SEWER SYSTEM	none
13. DESCRIBE PROPOSED WATER SYSTEM	none
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	meet standard county fire dept. requirements
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?

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

Ziad Alaywan 12/22/2022
Print Name Date

Jurg Heuberger
Signature
by/for applicant Jurg Heuberger 12/22/22
Date

Jurg Heuberger
Print Name
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"/> _____ <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 #

North Star 2

CHANGE OF ZONE

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

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

1. PROPERTY OWNER'S NAME Apex Energy Solutions, LLC.	EMAIL ADDRESS c/o jurgheuberger@gmail.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 604 Sutter St., Suite 250, Folsom, CA	ZIP CODE 95630	PHONE NUMBER c/o 760-996-0313
3. ENGINEER'S NAME NA	CA. LICENSE NO. NA	EMAIL ADDRESS
4. MAILING ADDRESS (Street / P O Box, City, State) NA	ZIP CODE	PHONE NUMBER

5. ASSESSOR'S PARCEL NO. 039-140-013 & 039-140-014	ZONING (existing) S-2	ZONING (proposed) S-2 RE
6. PROPERTY (site) ADDRESS pending assignment by ICPDS	SIZE OF PROPERTY (in acres or square foot) 460 AC & 154 Ac	
7. GENERAL LOCATION (i.e. city, town, cross street) north of HWY 79 and east of the Highline Canal		
8. LEGAL DESCRIPTION see attached PTR		

8. DESCRIBE CURRENT USE ON / OF PROPERTY (list and describe in detail)
vacant open space/desert
9. PLEASE STATE REASON FOR PROPOSED USE (be specific)
to develop a solar PV and BESS project
10. DESCRIBE SURROUNDING PROPERTY USES
generally open space desert owned by BLM

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

Ziad Alaywan

12/22/2022

Print Name

Date

Signature

REQUIRED SUPPORT DOCUMENTS

- A. SITE PLAN
- B. PRELIMINARY TITLE REPORT (6 months or newer)
- C. FEE _____
- D. OTHER _____

APPLICATION RECEIVED BY: _____

DATE _____

REVIEW / APPROVAL BY

APPLICATION DEEMED COMPLETE BY: _____

DATE _____

OTHER DEPT'S required.

APPLICATION REJECTED BY: _____

DATE _____

P. W.

E. H. S

A. P. C. D

O. E. S

TENTATIVE HEARING BY: _____

DATE _____

FINAL ACTION:

APPROVED

DENIED

DATE _____

ZC #

CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236


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

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7. PROPERTY (site) ADDRESS Pending assignment by ICPDS		
8. GENERAL LOCATION (i.e. city, town, cross street) North of Highway 78 East of the Highline Canal		
9. LEGAL DESCRIPTION see attached PTR		

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

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail)	_____
	this application is to supplement the previously filed CUP app for a solar project by adding a water well
11. DESCRIBE CURRENT USE OF PROPERTY	vacant desert land
12. DESCRIBE PROPOSED SEWER SYSTEM	none
13. DESCRIBE PROPOSED WATER SYSTEM	none
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	meet standard county fire dept. requirements
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?

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

Ziad Alaywan 1/19/2023
 Print Name Date

 Signature
 by/for applicant Jurg Heurberger
 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.
APPLICATION DEEMED COMPLETE BY: _____	DATE _____	<input type="checkbox"/> P. W.
APPLICATION REJECTED BY: _____	DATE _____	<input type="checkbox"/> E H S.
TENTATIVE HEARING BY: _____	DATE _____	<input type="checkbox"/> A P C D.
FINAL ACTION: <input type="checkbox"/> APPROVED <input type="checkbox"/> DENIED	DATE _____	<input type="checkbox"/> O E S.
		<input type="checkbox"/> _____
		<input type="checkbox"/> _____

CUP #

Project name: Northstar 2.

IMPERIAL COUNTY PLANNING & DEVELOPMENT SERVICES GENERAL INDEMNIFICATION AGREEMENT

As part of this application, applicant and real party in interest, if different, agree to defend, indemnify, hold harmless, and release the County of Imperial ("County"), its agents, officers, attorneys, and employees (including consultants) from any claim, action, or proceeding brought against any of them, the purpose of which is to attack, set aside, void, or annul the approval of this application or adoption of the environmental document which accompanies it. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorney fees, or expert witness fees that may be asserted by any person or entity, including the applicant, arising out of or in connection with the approval of this application, whether or not there is concurrent negligence on the part of the County, its agents, officers, attorneys, or employees (including consultants).

If any claim, action, or proceeding is brought against the County, its agents, officers, attorneys, or employees (including consultants), to attack, set aside, void, or annul the approval of the application or adoption of the environmental document which accompanies it, then the following procedures shall apply:

1. The Planning Director shall promptly notify the County Board of Supervisors of any claim, action or proceeding brought by an applicant challenging the County's action. The County, its agents, attorneys and employees (including consultants) shall fully cooperate in the defense of that action.
2. The County shall have the final determination on how to best defend the case and will consult with applicant regularly regarding status and the plan for defense. The County will also consult and discuss with applicant the counsel to be used by County to defend it, either with in-house counsel, or by retaining outside counsel provided that the County shall have the final decision on the counsel retained to defend it. Applicant shall be fully responsible for all costs incurred. Applicant shall be entitled to provide his or her own counsel to defend the case, and said independent counsel shall work with County Counsel to provide a joint defense.

Executed at Folsom California on January 3rd, 2023

APPLICANT

REAL PARTY IN INTEREST

(If different from Applicant)

Name: Ziad Alaynan

Name _____

By [Signature]

By _____

Title Managing Member/CEO

Title _____

Mailing Address:

Mailing Address:

1004 Sutter St Suite 250
Folsom, CA 95630

ACCEPTED/RECEIVED BY _____ Date _____

PROJECT ID NO _____ APN _____

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Northstar 2

**Imperial County Planning & Development Services
Planning / Building / Parks & Recreation**

**Jim Minnick
DIRECTOR**

NOTICE TO APPLICANT

SUBJECT: PAYMENT OF FEES

Dear Applicant:

Pursuant to County Codified Ordinance Division 9, Chapter 1, Section 90901.02, all Land Use Applications must be submitted with their appropriate application fee. Failure to comply will cause application to be rejected.

Please note that once the Department application is received and accepted, a "time track" billing will commence immediately. Therefore, should you decide to cancel or withdraw your project at any time, the amount of time incurred against your project will be billed and deducted from your payment. As a consequence, if you request a refund pursuant to County Ordinance, your refund, if any, will be the actual amount paid minus all costs incurred against the project.

Please note there will be no exceptions to this policy. Thank you for your attention.

Sincerely yours,

**Jim Minnick, Director
Planning & Development Services**

RECEIVED BY:

DATE:

01/31/2023

***Project Description
For the
NorthStar 2 PV/BESS***

INTRODUCTION:

The NorthStar 2 Solar Energy Project and Battery Electric Storage System (BESS) (Project), includes the construction of a 130-megawatt (MW) alternating current solar field and a 175 MW BESS, on approximately 614 acres of vacant land on two parcels in Imperial County, California (APN 039-140-013, 460 acres, and APN 039-140-014, 154 acres).

PROJECT OVERVIEW:

The Project proposes to construct a 130-megawatt (MW) alternating current solar field, consisting of 289,800 tracker modules in 9,660 strings and associated collector and inverter facilities, and a 175 MW BESS, on approximately 614 acres of vacant land. The Project would connect to the grid offsite through an approximately 1.25-mile gen-tie line to the 230 kV KN transmission line near the East Highland Canal. Operational water supply for the Project would be trucked in from offsite over the life of the Project. Neither parcel is within the County's Renewable Energy and Transmission (RE) Element. An amendment to the County's General Plan will be needed to include and classify the Project Site within the RE Overlay Zone. Additionally, a CUP to allow construction and operation of the solar energy generation facility with battery storage within the RE Overlay Zone will be required to implement the Project.

PROJECT LOCATION:

The total combined Project Site, consisting of two separate parcels of 154 acres and 460 acres in size, spans approximately 614 acres on land between the East Highline Canal and Coachella Canal, abutting State Route 78 on the Site's southern boundary and approximately 13 miles east of Brawley. The Site is currently vacant, undeveloped land, and is surrounded by Open Space on all sides. The California Department of Conservation's Imperial County Important Farmland Map (2018) categorizes the parcels as "Other Land," indicating that they are not considered important farmland under any category (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance). Attached is the site plan (EXHIBIT A) and the gentie map (EXHIBIT B).

GENTIE CONNECTION:

To connect this project to the IID (Imperial Irrigation District) grid, a gentie line approximately 1.0 to 1.25 mile in length across the adjacent (to the west) BLM owned land will be required. This will require the concurrent processing of an application with BLM for the necessary Right of Way.

ACCESS to PROJECT SITE:

The site can be accessed from HWY 78 . The project proposes to construct an entrance near the southwest corner of the project site by constructing a commercial grade access entry. The access to the site will be gated and only authorized entities will be allowed access. An encroachment permit from CALTRANS will be required for the project. Due to limited access allowed to state controlled Highways, only once entrance is being proposed.

**Project Description
For the
NorthStar 2 PV/BESS**

BESS:

As noted above a 175 MW battery system is being proposed with this project. The location of the BESS will be along the south west side of project paralleling HWY 78. The type of battery system is yet to be finalized however more than likely it will be the TESLA Megawall or equal type of system. This will not be a battery system within a conventional building.

SECURITY:

The entire site will be fenced with a 6 ft. high chain linked fence with secured access gate. In addition, this site is entirely remotely operated and will have a full video surveillance security system. Given that these type of projects are self monitored and given that they are secured by the operators there is minimal if no need for police services. At most if an incident occurred at the site the sheriff's office may receive a call for service in which case the project will pay all direct costs for such service.

FIRE PROTECTION:

This is a PV/BESS project that is located in a remote area of the County. The project will meet all County Fire Department requirements. However there will be limited need for actual fire protection in case of a fire insofar as the battery system will be the type that needs to burn to the ground rather than have water applied. These type of battery systems are in open areas and are designed not to be extinguished. In fact attempting to extinguish them creates additional problem with longer burn times and more obnoxious smoke. At most the fire department would need to perform stand by services to prevent the fire from spreading to adjacent property. Given however that adjacent lands are open space desert with no structures at most the fire department would need to minimize brush fires. There will be two 10,000 gallon water storage tanks located on site at location(s) determined by the fire dept. these tanks will be maintained full at all times for fire protection purposes only.

OPERATIONS:

This project once constructed will have no on site personnel nor on site offices. At most there may be a small storage building to house limited supplies. During normal operations there will be routine maintenance which would be performed by one or two individuals going to the site. In addition, there will be rare need for washing the panels. This may occur once each year at most.

WATER SOURCE:

Given that this site is outside of the IID's irrigated district boundary, water cannot be obtained from any of the IID delivery canals unless IID policies change. In order to provide water for the construction and on going operations a water will need to be provided. A separate CUP application has been submitted for this project to drill and operate a water well.

A.I.T.A./N.S.P.S. LAND TITLE SURVEY

SURVEYOR'S STATEMENT

I, the undersigned, being a duly qualified and licensed Surveyor in the State of California, do hereby certify that the foregoing is a true and correct copy of the original field notes and computations made by me or under my direct supervision and that the same are in accordance with the facts and conditions as shown to me by the parties to the survey and that the same are in accordance with the facts and conditions as shown to me by the parties to the survey and that the same are in accordance with the facts and conditions as shown to me by the parties to the survey.

SCHEDULE B ITEMS FROM PRELIMINARY TITLE REPORT NO. 1393641 DATED NOVEMBER 03, 2021

- ▲ WALL, BENCH, DRAIN OR CULVERT TO BE SHOWN BY THE SURVEYOR'S OFFICE
- ▲ FENCE OR BOUNDARY TO BE SHOWN BY THE SURVEYOR'S OFFICE
- ▲ POINTS OF CHANGE OF ALIGNMENT FOR DRAINS, BENCHES, OR FENCES TO BE SHOWN BY THE SURVEYOR'S OFFICE
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LEGAL DESCRIPTION

SECTION 34, T11N, R11E, S1E, COUNTY OF IMPERIAL, STATE OF CALIFORNIA

ACRES 616.21±

GENERAL NOTE:

THIS SURVEY WAS CONDUCTED IN ACCORDANCE WITH THE SURVEYING ACTS AND REGULATIONS OF THE STATE OF CALIFORNIA. THE SURVEYOR HAS REVIEWED THE RECORDS OF THE COUNTY CLERK AND HAS FOUND NO RECORDS OF ANY PREVIOUS SURVEYS OF THIS PROPERTY.

BASES OF BEARINGS

THE BEARINGS AND DISTANCES OF THE BOUNDARIES OF THIS PROPERTY ARE AS SHOWN ON THE ATTACHED FIELD NOTES AND COMPUTATIONS.

PROPERTY NOTE:

THE PROPERTY IS SUBJECT TO THE EASEMENTS AND RIGHTS SHOWN ON THE ATTACHED FIELD NOTES AND COMPUTATIONS.

ACREAGE

TOTAL ACRES 616.21±

ZONING:

AG-15 (AGRICULTURE)

CURRENT EASED IN:

AGRICULTURE

PROFESSIONAL LIABILITY INSURANCE:

THE SURVEYOR HAS PROFESSIONAL LIABILITY INSURANCE COVERAGE FOR THIS SURVEY.

INCREMENTAL DISTANCE NOTE:

THE SURVEYOR HAS MEASURED THE DISTANCES OF THE BOUNDARIES OF THIS PROPERTY AND HAS FOUND THEM TO BE IN ACCORDANCE WITH THE FACTS AND CONDITIONS AS SHOWN TO ME BY THE PARTIES TO THE SURVEY.

LEGEND:

- 1000 MONUMENTS AS SHOWN
- 25' MONUMENTS AS SHOWN
- ▲ 5' MONUMENTS AS SHOWN
- ▲ 15' MONUMENTS AS SHOWN
- ▲ 30' MONUMENTS AS SHOWN
- ▲ 45' MONUMENTS AS SHOWN
- ▲ 60' MONUMENTS AS SHOWN
- ▲ 75' MONUMENTS AS SHOWN
- ▲ 90' MONUMENTS AS SHOWN
- ▲ 105' MONUMENTS AS SHOWN
- ▲ 120' MONUMENTS AS SHOWN
- ▲ 135' MONUMENTS AS SHOWN
- ▲ 150' MONUMENTS AS SHOWN
- ▲ 165' MONUMENTS AS SHOWN
- ▲ 180' MONUMENTS AS SHOWN
- ▲ 195' MONUMENTS AS SHOWN
- ▲ 210' MONUMENTS AS SHOWN
- ▲ 225' MONUMENTS AS SHOWN
- ▲ 240' MONUMENTS AS SHOWN
- ▲ 255' MONUMENTS AS SHOWN
- ▲ 270' MONUMENTS AS SHOWN
- ▲ 285' MONUMENTS AS SHOWN
- ▲ 300' MONUMENTS AS SHOWN
- ▲ 315' MONUMENTS AS SHOWN
- ▲ 330' MONUMENTS AS SHOWN
- ▲ 345' MONUMENTS AS SHOWN
- ▲ 360' MONUMENTS AS SHOWN
- ▲ 375' MONUMENTS AS SHOWN
- ▲ 390' MONUMENTS AS SHOWN
- ▲ 405' MONUMENTS AS SHOWN
- ▲ 420' MONUMENTS AS SHOWN
- ▲ 435' MONUMENTS AS SHOWN
- ▲ 450' MONUMENTS AS SHOWN
- ▲ 465' MONUMENTS AS SHOWN
- ▲ 480' MONUMENTS AS SHOWN
- ▲ 495' MONUMENTS AS SHOWN
- ▲ 510' MONUMENTS AS SHOWN
- ▲ 525' MONUMENTS AS SHOWN
- ▲ 540' MONUMENTS AS SHOWN
- ▲ 555' MONUMENTS AS SHOWN
- ▲ 570' MONUMENTS AS SHOWN
- ▲ 585' MONUMENTS AS SHOWN
- ▲ 600' MONUMENTS AS SHOWN
- ▲ 615' MONUMENTS AS SHOWN
- ▲ 630' MONUMENTS AS SHOWN
- ▲ 645' MONUMENTS AS SHOWN
- ▲ 660' MONUMENTS AS SHOWN
- ▲ 675' MONUMENTS AS SHOWN
- ▲ 690' MONUMENTS AS SHOWN
- ▲ 705' MONUMENTS AS SHOWN
- ▲ 720' MONUMENTS AS SHOWN
- ▲ 735' MONUMENTS AS SHOWN
- ▲ 750' MONUMENTS AS SHOWN
- ▲ 765' MONUMENTS AS SHOWN
- ▲ 780' MONUMENTS AS SHOWN
- ▲ 795' MONUMENTS AS SHOWN
- ▲ 810' MONUMENTS AS SHOWN
- ▲ 825' MONUMENTS AS SHOWN
- ▲ 840' MONUMENTS AS SHOWN
- ▲ 855' MONUMENTS AS SHOWN
- ▲ 870' MONUMENTS AS SHOWN
- ▲ 885' MONUMENTS AS SHOWN
- ▲ 900' MONUMENTS AS SHOWN
- ▲ 915' MONUMENTS AS SHOWN
- ▲ 930' MONUMENTS AS SHOWN
- ▲ 945' MONUMENTS AS SHOWN
- ▲ 960' MONUMENTS AS SHOWN
- ▲ 975' MONUMENTS AS SHOWN
- ▲ 990' MONUMENTS AS SHOWN
- ▲ 1005' MONUMENTS AS SHOWN
- ▲ 1020' MONUMENTS AS SHOWN
- ▲ 1035' MONUMENTS AS SHOWN
- ▲ 1050' MONUMENTS AS SHOWN
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- ▲ 1110' MONUMENTS AS SHOWN
- ▲ 1125' MONUMENTS AS SHOWN
- ▲ 1140' MONUMENTS AS SHOWN
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- ▲ 1335' MONUMENTS AS SHOWN
- ▲ 1350' MONUMENTS AS SHOWN
- ▲ 1365' MONUMENTS AS SHOWN
- ▲ 1380' MONUMENTS AS SHOWN
- ▲ 1395' MONUMENTS AS SHOWN
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- ▲ 1800' MONUMENTS AS SHOWN
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- ▲ 1965' MONUMENTS AS SHOWN
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- ▲ 1995' MONUMENTS AS SHOWN
- ▲ 2010' MONUMENTS AS SHOWN
- ▲ 2025' MONUMENTS AS SHOWN
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- ▲ 2205' MONUMENTS AS SHOWN
- ▲ 2220' MONUMENTS AS SHOWN
- ▲ 2235' MONUMENTS AS SHOWN
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- ▲ 2265' MONUMENTS AS SHOWN
- ▲ 2280' MONUMENTS AS SHOWN
- ▲ 2295' MONUMENTS AS SHOWN
- ▲ 2310' MONUMENTS AS SHOWN
- ▲ 2325' MONUMENTS AS SHOWN
- ▲ 2340' MONUMENTS AS SHOWN
- ▲ 2355' MONUMENTS AS SHOWN
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- ▲ 2910' MONUMENTS AS SHOWN
- ▲ 2925' MONUMENTS AS SHOWN
- ▲ 2940' MONUMENTS AS SHOWN
- ▲ 2955' MONUMENTS AS SHOWN
- ▲ 2970' MONUMENTS AS SHOWN
- ▲ 2985' MONUMENTS AS SHOWN
- ▲ 3000' MONUMENTS AS SHOWN

PROPERTY LOCATION:

SECTION 34, T11N, R11E, S1E, COUNTY OF IMPERIAL, STATE OF CALIFORNIA

NOTE:

THE SURVEYOR HAS REVIEWED THE RECORDS OF THE COUNTY CLERK AND HAS FOUND NO RECORDS OF ANY PREVIOUS SURVEYS OF THIS PROPERTY.

SCALE:

1" = 100'

DATE:

6-1-2022

PROJECT NO.:

1

DATE OF SURVEY:

5/20/22

DATE OF PLOTTING:

6/1/22

SCALE:

1" = 100'

DATE:

6-1-2022

PROJECT NO.:

1

DATE OF SURVEY:

5/20/22

DATE OF PLOTTING:

6/1/22

SCALE:

1" = 100'

DATE:

6-1-2022

PROJECT NO.:

1

DATE OF SURVEY:

5/20/22

DATE OF PLOTTING:

6/1/22

SCALE:

1" = 100'

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6-1-2022

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6-1-2022

PROJECT NO.:

1

DATE OF SURVEY:

5/20/22

DATE OF PLOTTING:

6/1/22

SCALE:

1" = 100'

DATE:

6-1-2022

PROJECT NO.:

1

DATE OF SURVEY:

5/20/22

DATE OF PLOTTING:

6/1/22

Recorded in Official Records, IMPERIAL COUNTY

12/01/2021
03:11 PM
IsabelVarg

CHUCK STOREY
COUNTY CLERK/RECORDER
STC STEWART TITLE COMPANY

Recording Requested by (name):

Stewart Title of California

When recorded mail to and mail tax statements to:

Apex Energy Solutions

604 Sutter St., Ste. 250

Folsom, CA 95630

1193541

Doc#: **2021030854**

Titles: 1 Pages: 13



Fees 80.00

Taxes 570.90

Other 0.00

PAID 630.90

* \$ R 0 0 0 0 4 6 2 1 9 0 \$ *

Recorder's Use Only

Grant Deed

Title of Document

Commencing January 1, 2018, and except as provided in paragraph (2) GC 27388.1, in addition to any other recording fees specified in this code, a fee of seventy-five dollars (\$75) shall be paid at the time of recording of every real estate instrument, paper, or notice required or permitted by law to be recorded, except those expressly exempted from payment of recording fees, per each single transaction per parcel of real property. The fee imposed by this section shall not exceed two hundred twenty-five dollars (\$225). "Real estate instrument, paper, or notice" means a document relating to real property, including, but not limited to, the following: deed, grant deed, trustee's deed, deed of trust, reconveyance, quit claim deed, fictitious deed of trust, assignment of deed of trust, request for notice of default, abstract of judgment, subordination agreement, declaration of homestead, abandonment of homestead, notice of default, release or discharge, easement, notice of trustee sale, notice of completion, UCC financing statement, mechanic's lien, maps, and covenants, conditions, and restrictions. Pursuant to GC section 27388.1 (2) the fee described in paragraph (1) shall not be imposed on any of the following documents:

Reason for Exemption:

- Any real estate instrument, paper, or notice recorded in connection with a transfer subject to the imposition of a documentary transfer tax as defined in Section 11911 of the Revenue and Taxation Code.
- Any real estate instrument, paper, or notice recorded in connection with a transfer of real property that is a residential dwelling to an owner-occupier.
- Any real estate instrument, paper, or notice executed or recorded by the federal government in accordance with the Uniform Federal Lien Registration Act (Title 7(commencing with Section 2100) of Part 4 of the Code of Civil Procedure).
- Any real estate instrument, paper, or notice executed or recorded by the state or any county, municipality, or other political subdivision of the state.
- Exempt from fee per GC 27388.1 (a) (1); fee cap of \$225.00 reached.
- Exempt from fee per GC 27388.1 (a) (1); not related to real property.

I hereby declare under Penalty of Perjury that the information provided above is true and correct.

Executed this 30th day of November, 2021 at Riverside, CA STATE
DAY MONTH YEAR CITY STATE

Theresa Alonzo
PRINT NAME

Theresa Alonzo
SIGNATURE

COMPLETE Documentary Transfer Tax Declaration ONLY when document is transferring title.

Documentary Transfer Tax: \$ 570.90 If exempt, enter R&T code: _____

- Computed on full value of the property conveyed.
- Computed on full value less liens & encumbrances remaining thereon at time of sale.
- Unincorporated Area City of Imperial

Theresa Alonzo
Signature of declarant or agent determining tax

MAIL TAX STATEMENTS AS DIRECTED ABOVE OR TO: _____
(IF DIFFERENT FROM ABOVE)

Recording requested by
Stewart Title of California, Inc.
RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions
604 Sutter St. Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502
TITLE ORDER NO.: 1193541
ESCROW NO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the DOCUMENTARY TRANSFER TAX IS: \$ 570.90
 Unincorporated area City of IMPERIAL COUNTY
 computed on the full value of the interest of property conveyed, or
 computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
 OR transfer is EXEMPT from tax for the following reason:

The Undersigned

Signature of declarant or agent determining tax

Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as: Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof.

Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records.

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

*This Deed is signed in
Counterparts*

BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

By: 
DENISE PAGLIUSO KECK,

By: _____
LINDA FAREED,

JAMES J. PAGLIUSO

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Page 1 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF CALIFORNIA
COUNTY OF Riverside
On July 14 2021 before me, J. Valenzuela Lopez, a Notary Public
personally appeared Denise Pagliuso Keck

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(SEAL)



Page 2 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: J. Valenzuela Lopez

COMMISSION NO: 2246715

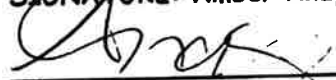
PLACE OF EXECUTION: Riverside, CA

DATE COMMISSION EXPIRES: June 18, 2022

COUNTY OF COMMISSION: Riverside

MANUFACTURER/VENDER NO: VSI1

SIGNATURE: Amber Anaya



DATE: November 30, 2021

Stewart Title-Riverside

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions, LLC
604 Sutter St., Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502

TITLE ORDER NO.: 1193541

ESCROW NO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the DOCUMENTARY TRANSFER TAX IS: *Collected for on previous page*
___ Unincorporated area City of IMPERIAL COUNTY
 computed on the full value of the interest of property conveyed, or
___ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
___ OR transfer is EXEMPT from tax for the following reason:

The undersigned

Signature of declarant or agent determining tax Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as: Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof.

Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records.

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

*this deed is signed in
counterparts*

BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

By: *[Signature]*
DENISE PAGLIUSO KECK

By: *[Signature]*
LINDA FAREED,

JAMES J. PAGLIUSO

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Page 1 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF CALIFORNIA
COUNTY OF Santa Barbara
On July 12, 2021 before me, Mary L. Ortega, a Notary Public
personally appeared Linda Fareed

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Mary L. Ortega

(SEAL)



Page 2 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: Mary L. Ortega

COMMISSION NO: 2268131

PLACE OF EXECUTION: Santa Barbara, CA

DATE COMMISSION EXPIRES: Dec 17, 2022

COUNTY OF COMMISSION: Santa Barbara

MANUFACTURER/VENDER NO: NNA1

SIGNATURE: Amber Anaya

 **DATE: November 30, 2021**
Stewart Title-Riverside

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions, LLC
604 Sutter St. Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502
TITLE ORDER NO.: 1193541
ESCROWNO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the **DOCUMENTARY TRANSFER TAX IS: \$** *Collected for on previous page*
___ Unincorporated area City of IMPERIAL COUNTY
 computed on the full value of the interest of property conveyed, or
___ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
___ OR transfer is EXEMPT from tax for the following reason:

The Undersigned
Signature of declarant or agent determining tax Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as:
Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof.
Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records.
APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

*This Deed is signed in
Counterparts*

BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

By: _____
DENISE PAGLIUSO KECK,

By: *[Signature]*
LINDA FAREED,
JAMES J. PAGLIUSO

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Page 1 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

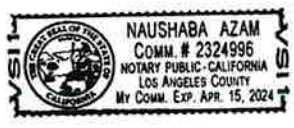
STATE OF CALIFORNIA
COUNTY OF LOS ANGELES)
On July 21st, 2021 before me, NAUSHABA AZAM a Notary Public
personally appeared JAMES J. PAGLIUSO

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Naushaba Azam (SEAL)



Page 2 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: Naushaba Azam

COMMISSION NO: 2324996

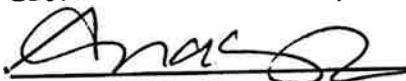
PLACE OF EXECUTION: Los Angeles, CA

DATE COMMISSION EXPIRES: April 15, 2024

COUNTY OF COMMISSION: Los Angeles

MANUFACTURER/VENDER NO: VSI1

SIGNATURE: Amber Anaya

 **DATE: November 30, 2021**
Stewart Title-Riverside

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions, LLC
604 Sutter St., Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502
TITLE ORDER NO.: 1193541
ESCROWNO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the DOCUMENTARY TRANSFER TAX IS:
___ Unincorporated area City of IMPERIAL COUNTY
XX computed on the full value of the interest of property conveyed, or
___ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
___ OR transfer is EXEMPT from tax for the following reason:

Collected for on previous page

The Undersigned
Signature of declarant or agent determining tax Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as: Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof. Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records. APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

This Deed is signed in Counterparts

By: _____
DENISE PAGLIUSO KECK,

By: _____
LINDA FAREED,

JAMES J. PAGLIUSO
[Signature]

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Page 1 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF ~~CALIFORNIA~~ ^{NEW MEXICO AS}
COUNTY OF SANTA FE
On July 22nd 2021 before me, RANDALL BROKESHOULDER, a Notary Public
personally appeared JEAN PAGLIUSO

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of ~~California~~ ^{NEW MEXICO AS} that the foregoing paragraph is true and correct.

WITNESS my hand and official seal
Signature [Handwritten Signature] (SEAL)



Page 2 of 2 Grant Deed dated July 8, 2021
VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

GOVERNMENT CODE 27361.7

I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED READS AS FOLLOWS:

NAME OF NOTARY: Randall Brokeshoulder

COMMISSION NO:

PLACE OF EXECUTION: Santa Fe, NM

DATE COMMISSION EXPIRES: April 20, 2022

COUNTY OF COMMISSION: New Mexico

MANUFACTURER/VENDER NO:

SIGNATURE: Amber Anaya



DATE: November 30, 2021

Stewart Title-Riverside



PRELIMINARY REPORT

Order No.: 7102211810-SB

Property: APN/Parcel ID: 039-140-013-000

*In response to the application for a policy of title insurance referenced herein, **Chicago Title Company** hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of title insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.*

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

The policy(ies) of title insurance to be issued hereunder will be policy(ies) of Chicago Title Insurance Company, a Florida corporation.

Please read the exceptions shown or referred to herein and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

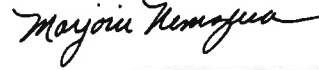
Chicago Title Insurance Company

By:



Michael J. Nolan, President

Attest:



Marjorie Nemzura, Secretary

Countersigned By:



Authorized Officer or Agent

Date:



Visit Us on our Website: www.ctic.com



ISSUING OFFICE: 1425 Main Street, El Centro, CA 92244

FOR SETTLEMENT INQUIRIES, CONTACT:

TBD

• FAX

PRELIMINARY REPORT

Title Officer: Stacey Benner
Email: stacey.benner@ctt.com
Phone No.: (760)335-3125
Fax No.: (760)353-1307
Title No.: 7102211810-SB

Customer:
Email:
Phone No.:
Fax No.:
Ref. No.:

PROPERTY ADDRESS(ES): [APN/Parcel ID\(s\) 039-140-013-000 and 039-140-014-000](#)

EFFECTIVE DATE: October 28, 2022 at 12:00 AM

The form of policy or policies of title insurance contemplated by this report is:

Condition of Title Guarantee

1. The estate or interest in the Land hereinafter described or referred to covered by this Report is:

Fee

2. Title to said estate or interest at the date hereof is vested in:

APEX Energy Solutions, LLC

3. The Land referred to in this Report is described as follows:

For APN/Parcel ID(s): 039-140-013-000 and 039-140-014-000

SECTION 36, TOWNSHIP 13 SOUTH, RANGE 16 EAST, S.B.M., IN AN UNINCORPORATED AREA OF THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THAT PORTION AS DISCLOSED BY THAT FINAL ORDER OF CONDEMNATION RECORDED NOVEMBER 10, 1968 AS DOCUMENT NO. 55 IN BOOK 1237, PAGE 355 OF OFFICIAL RECORDS.

AT THE DATE HEREOF, EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN SAID POLICY FORM WOULD BE AS FOLLOWS:

1. Property taxes, including any personal property taxes and any assessments collected with taxes are as follows:

Code Area: 073-000
Tax Identification No.: 039-140-013-000
 Fiscal Year: 2022-2023
 1st Installment: \$1,073.19 Not Paid
 2nd Installment: \$1,073.19 Not Paid
 Land: \$194,500.00

2. Property taxes, including any personal property taxes and any assessments collected with taxes are as follows:

Code Area: 073-000
Tax Identification No.: 039-140-013-502
 Fiscal Year: 2022-2023
 1st Installment: \$1,073.19 Not Paid
 2nd Installment: \$1,073.19 Not Paid
 Land: \$194,500.00

3. Property taxes, including any personal property taxes and any assessments collected with taxes are as follows:

Code Area: 068-006
Tax Identification No.: 039-140-014-000
 Fiscal Year: 2022-2023
 1st Installment: \$372.61 Not Paid
 2nd Installment: \$372.61 Not Paid
 Land: \$65,000.00

4. Property taxes, including any personal property taxes and any assessments collected with taxes are as follows:

Code Area: 068-006
Tax Identification No.: 039-140-014-502
 Fiscal Year: 2022-2023
 1st Installment: \$372.61 Not Paid
 2nd Installment: \$372.61 Not Paid
 Land: \$65,000.00

5. Supplemental assessment for 2021-2022:

1st Installment \$1.92, Not Paid
 Must be Paid By: June 30, 2022
 2nd Installment: \$11.92, Not Paid
 Must be Paid By: October 31, 2022
 Bill No.: 990-125-689-000

6. The lien of supplemental or escaped assessments of property taxes, if any, made pursuant to the provisions of Chapter 3.5 (commencing with Section 75) or Part 2, Chapter 3, Articles 3 and 4, respectively, of the Revenue and Taxation Code of the State of California as a result of the transfer of title to the vestee named in Schedule A or as a result of changes in ownership or new construction occurring prior to Date of Policy.

7. Taxes and assessments levied by the Imperial Irrigation District, if any.

8. Water rights, claims or title to water, whether or not disclosed by the public records.

EXCEPTIONS
(continued)

9. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

END OF EXCEPTIONS

NOTES

- Note 1.** Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.
- Note 2.** If a county recorder, title insurance company, escrow company, real estate broker, real estate agent or association provides a copy of a declaration, governing document or deed to any person, California law requires that the document provided shall include a statement regarding any unlawful restrictions. Said statement is to be in at least 14-point bold face type and may be stamped on the first page of any document provided or included as a cover page attached to the requested document. Should a party to this transaction request a copy of any document reported herein that fits this category, the statement is to be included in the manner described.
- Note 3.** If this company is requested to disburse funds in connection with this transaction, Chapter 598, Statutes of 1989 mandates hold periods for checks deposited to escrow or sub-escrow accounts. The mandatory hold period for cashier's checks, certified checks and teller's checks is one business day after the day deposited. Other checks require a hold period of from two to five business days after the day deposited. In the event that the parties to the contemplated transaction wish to record prior to the time that the funds are available for disbursement (and subject to Company approval), the Company will require the prior written consent of the parties. Upon request, a form acceptable to the company authorizing said early recording may be provided to Escrow for execution.
- Wire Transfers**
- There is no mandated hold period for funds deposited by confirmed wire transfer. The Company may disburse such funds the same day.
- Note 4.** Any documents being executed in conjunction with this transaction must be signed in the presence of an authorized Company employee, an authorized employee of an agent, an authorized employee of the insured lender, or by using Bancserv or other approved third-party service. If the above requirements cannot be met, please call the company at the number provided in this report.
- Note 5.** The application for title insurance was placed by reference to only a street address or tax identification number. The proposed Insured must confirm that the legal description in this report covers the parcel(s) of Land requested to be insured. If the legal description is incorrect, the proposed Insured must notify the Company and/or the settlement company in order to prevent errors and to be certain that the legal description for the intended parcel(s) of Land will appear on any documents to be recorded in connection with this transaction and on the policy of title insurance.
- Note 6.** Note: Pursuant to Government Code Section 27388.1, as amended and effective as of 1-1-2018, a Documentary Transfer Tax (DTT) Affidavit may be required to be completed and submitted with each document when DTT is being paid or when an exemption is being claimed from paying the tax. If a governmental agency is a party to the document, the form will not be required. DTT Affidavits may be available at a Tax Assessor-County Clerk-Recorder.
- Note 7.** Due to the special requirements of SB 50 (California Public Resources Code Section 8560 et seq.), any transaction that includes the conveyance of title by an agency of the United States must be approved in advance by the Company's State Counsel, Regional Counsel, or one of their designees.

NOTES
(continued)

Note 8. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: APEX Energy Solutions, LLC

- a. A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.
- b. If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendment thereto with the appropriate filing stamps.
- c. If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.
- d. A current dated certificate of good standing from the proper governmental authority of the state in which the entity was created
- e. If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.
- f) If Limited Liability Company is a Single Member Entity, a Statement of Information for the Single Member will be required.
- g) Each member and manager of the LLC without an Operating Agreement must execute in the presence of a notary public the Certificate of California LLC (Without an Operating Agreement) Status and Authority form

END OF NOTES

EXHIBIT "A"
Legal Description

For APN/Parcel ID(s): 039-140-013-000 and 039-140-014-000

SECTION 36, TOWNSHIP 13 SOUTH, RANGE 16 EAST, S.B.M., IN AN UNINCORPORATED AREA OF THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THAT PORTION AS DISCLOSED BY THAT FINAL ORDER OF CONDEMNATION RECORDED NOVEMBER 10, 1968 AS DOCUMENT NO. 55 IN BOOK 1237, PAGE 355 OF OFFICIAL RECORDS.



Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice.
If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. **DO NOT** use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** **DO NOT** send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and **DO NOT** reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
<http://www.fbi.gov>

Internet Crime Complaint Center:
<http://www.ic3.gov>

FIDELITY NATIONAL FINANCIAL CALIFORNIA PRIVACY NOTICE

Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, "FNF," "our," or "we") respect and are committed to protecting your privacy. This California Privacy Notice explains how we collect, use, and disclose Personal Information, when and to whom we disclose such information, and the rights you, as a California resident ("Consumer"), have regarding your Personal Information ("California Privacy Rights"). Some subsidiaries maintain separate California Privacy Notices or privacy statements. If a subsidiary has a separate California Privacy Notice, it will be available on the subsidiary's website, and this California Privacy Notice does not apply.

Collection of categories of Personal Information:

In the preceding twelve (12) months FNF has collected, and will continue to collect, the following categories of Personal Information from you:

- Identifiers such as name, address, telephone number, IP address, email address, account name, social security number, driver's license number, state identification card, financial information, date of birth, or other similar identifiers;
- Characteristics of protected classifications under California or Federal law;
- Commercial information, including records of personal property, products or services purchased, or other purchasing or consuming histories;
- Internet or other electronic network activity information including, but not limited to browsing history, search history, and information regarding a Consumer's interaction with an Internet website;
- Geolocation data;
- Professional or employment information;
- Education Information.

This Personal Information is collected from the following sources:

- Information we receive from you on applications or other forms;
- Information about your transactions with FNF, our affiliates, or others;
- Information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others;
- Information from the use of our websites and mobile applications.

This Personal Information is collected for the following business purposes:

- To provide products and services to you or in connection with a transaction involving you;
- To perform a contract between FNF and the Consumer;
- To improve our products and services;
- To comply with legal obligations;
- To protect against fraudulent or illegal activity;
- To communicate with you about FNF or our affiliates;
- To maintain an account with FNF or our affiliates;
- To provide, support, personalize, and develop our websites, products, and services;
- As described to you when collecting your personal information or as otherwise set forth in the California Consumer Privacy Act.

Disclosures of Personal Information for a business purpose:

In the preceding twelve (12) months FNF has disclosed, and will continue to disclose, the categories of Personal Information listed above for a business purpose. We may disclose Personal Information for a business purpose to the following categories of third parties:

- FNF affiliates and subsidiaries;
- Non-affiliated third parties, as directed by you;
- Businesses in connection with the sale or other disposition of all or part of the FNF business and/or assets;
- Service Providers;
- Law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order.

Sale of Personal Information:

In the preceding twelve (12) months, FNF has not sold Personal Information. FNF does not sell Personal Information.

Personal Information of minors:

FNF does not knowingly collect the Personal Information of minors.

Right to know:

Consumers have a right to know about Personal Information collected, used, disclosed, or sold. Consumers have the right to request FNF disclose what personal information it collected, used, and disclosed in the past twelve (12) months.

Right to request deletion:

Consumers have a right to request the deletion of their personal information.

Right to non-discrimination:

Consumers have a right not to be discriminated against by exercising their consumer privacy rights. We will not discriminate against Consumers for exercising any of their California Privacy Rights.

Right to use an Authorized Agent:

A Consumer may use an Authorized Agent to submit a request to know or a request to delete his or her information. Should a Consumer utilize an Authorized Agent, FNF will require the Consumer provide the agent written permission to make the request and verify his or her identity with FNF.

To exercise any of your California Privacy Rights, please follow the link "[California Privacy Request](#)" or call Toll Free 888-413-1748.

Upon making a California Privacy Request, FNF will verify the consumer's identity by requiring an account, loan, escrow number, or other identifying information from the consumer.

The above-rights are subject to any applicable rights and obligations including both Federal and California exemptions rendering FNF, or Personal Information collected by FNF, exempt from certain CCPA requirements.

FNF website services for mortgage loans:

Certain FNF companies provide services to mortgage loan servicers, including hosting websites that collect customer information on behalf of mortgage loan servicers (the "Service Websites"). The Service Websites may contain links to both this Privacy Notice and the mortgage loan servicer or lender's privacy notice. The sections of this Privacy Notice describing the categories, sources, and uses of your Personal Information do not apply to the Service Websites. The mortgage loan servicer or lender's privacy notice governs use, disclosure, and access to your Information. FNF does not share Information collected through the Service Websites, except (1) as required or authorized by contract with the mortgage loan servicer or lender, or (2) as required by law or in the good-faith belief that such disclosure is necessary to comply with a legal process or applicable law, to enforce this Privacy Notice, or to protect the rights, property, or safety of FNF or the public.

California Privacy Notice - Effective Date:

This California Privacy Notice was last updated on August 1, 2021.

Contact for more information:

For questions or concerns about FNF's California Privacy Notice and privacy practices, or to exercise any of your California Privacy Rights, please follow the link "[California Privacy](#)," call Toll Free 888-413-1748, or by mail to the below address. We may use your Personal Information for our affiliates (companies owned by FNF) to directly market to you. If you do not want FNF affiliates to directly market to you, visit FNF's "[Opt Out Page](#)" or contact us by phone at (888) 714-2710, or by mail to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

ATTACHMENT ONE

CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
- (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
 - (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
 - (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
 - (c) resulting in no loss or damage to the insured claimant;
 - (d) attaching or created subsequent to Date of Policy; or
 - (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.

Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

**ATTACHMENT ONE
(CONTINUED)**

**CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE**

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
 - a. building;
 - b. zoning;
 - c. land use;
 - d. improvements on the Land;
 - e. land division; and
 - f. environmental protection.

This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
 - a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
 - b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
 - c. that result in no loss to You; or
 - d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
 - a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
 - b. in streets, alleys, or waterways that touch the Land.

This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 16, 18, 19 and 21, Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	<u>Your Deductible Amount</u>	<u>Our Maximum Dollar Limit of Liability</u>
Covered Risk 16:	1.00% of Policy Amount Shown in Schedule A or \$2,500.00 (whichever is less)	\$ 10,000.00
Covered Risk 18:	1.00% of Policy Amount Shown in Schedule A or \$5,000.00 (whichever is less)	\$ 25,000.00
Covered Risk 19:	1.00% of Policy Amount Shown in Schedule A or \$5,000.00 (whichever is less)	\$ 25,000.00
Covered Risk 21:	1.00% of Policy Amount Shown in Schedule A or \$2,500.00 (whichever is less)	\$ 5,000.00

ATTACHMENT ONE (CONTINUED)

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

[Except as provided in Schedule B - Part II, [t[or T]his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

[PART I

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.]

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:]

ATTACHMENT ONE (CONTINUED)

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
 - (a) a fraudulent conveyance or fraudulent transfer; or
 - (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.]
7. [Variable exceptions such as taxes, easements, CC&R's, etc., shown here.]

**ATTACHMENT ONE
(CONTINUED)**

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY - ASSESSMENTS PRIORITY (04-02-15)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

Notice of Available Discounts

Pursuant to Section 2355.3 in Title 10 of the California Code of Regulations Fidelity National Financial, Inc. and its subsidiaries ("FNF") must deliver a notice of each discount available under our current rate filing along with the delivery of escrow instructions, a preliminary report or commitment. Please be aware that the provision of this notice does not constitute a waiver of the consumer's right to be charged the filed rate. As such, your transaction may not qualify for the below discounts.

You are encouraged to discuss the applicability of one or more of the below discounts with a Company representative. These discounts are generally described below; consult the rate manual for a full description of the terms, conditions and requirements for such discount. These discounts only apply to transactions involving services rendered by the FNF Family of Companies. This notice only applies to transactions involving property improved with a one-to-four family residential dwelling.

Not all discounts are offered by every FNF Company. The discount will only be applicable to the FNF Company as indicated by the named discount.

FNF Underwritten Title Companies

CTC - Chicago Title Company
CLTC - Commonwealth Land Title Company
FNTC - Fidelity National Title Company of California
FNTCCA - Fidelity National Title Company of California
TICOR - Ticor Title Company of California
LTC - Lawyer's Title Company
SLTC - ServiceLink Title Company

Underwritten by FNF Underwriters

CTIC - Chicago Title Insurance Company
CLTIC - Commonwealth Land Title Insurance Company
FNTIC - Fidelity National Title Insurance Company
FNTIC - Fidelity National Title Insurance Company
CTIC - Chicago Title Insurance Company
CLTIC - Commonwealth Land Title Insurance Company
CTIC - Chicago Title Insurance Company

Available Discounts

DISASTER LOANS (CTIC, CLTIC, FNTIC)

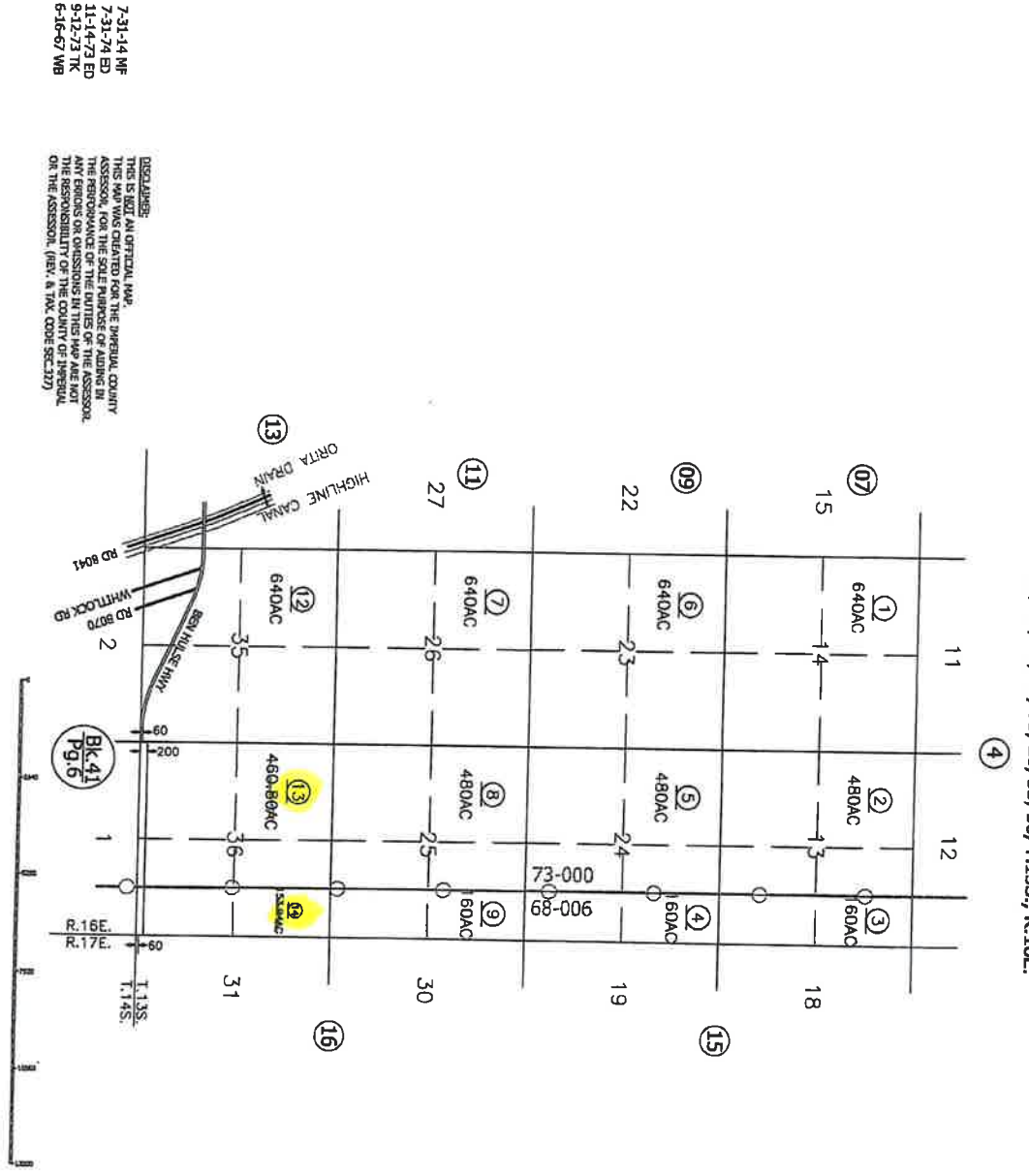
The charge for a Lender's Policy (Standard or Extended coverage) covering the financing or refinancing by an owner of record, within twenty-four (24) months of the date of a declaration of a disaster area by the government of the United States or the State of California on any land located in said area, which was partially or totally destroyed in the disaster, will be fifty percent (50%) of the appropriate title insurance rate.

CHURCHES OR CHARITABLE NON-PROFIT ORGANIZATIONS (CTIC, FNTIC)

On properties used as a church or for charitable purposes within the scope of the normal activities of such entities, provided said charge is normally the church's obligation the charge for an owner's policy shall be fifty percent (50%) to seventy percent (70%) of the appropriate title insurance rate, depending on the type of coverage selected. The charge for a lender's policy shall be forty percent (40%) to fifty percent (50%) of the appropriate title insurance rate, depending on the type of coverage selected.

This map/plot is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.

SEC. 13, 14, 23, 24, 25, 26, 35, 36, T.13S., R.16E.



Tax Area Code
68-006
73-000

39-14



Assessor's Map Bk. 39-pg. 14
County of Imperial, Calif.

**Air Quality and Greenhouse Gas Emissions
Assessment
for the
NorthStar 2 Project**

County of Imperial, California

Prepared For:

ZGlobal/APEX Energy Solutions
750 W. Main Street
El Centro, CA 92243

Prepared By:



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ENVIRONMENTAL CONSULTANTS

2525 Warren Drive
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November 2022

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
µg/m ³	Micrograms per cubic meter; ppm = parts per million
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
AB	Assembly Bill
AQMD	Air Quality Management District
BESS	Battery Electric Storage System
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
County	Imperial County
CUP	Conditional Use Permit
DPM	Diesel particulate matter
EO	Executive Order
GHG	Greenhouse gas
GWP	Global warming potential
ICAPCD	Imperial County Air Pollution Control District

LIST OF ACRONYMS AND ABBREVIATIONS

IPCC	Intergovernmental Panel on Climate Change
MDAQMD	Mojave Desert Air Quality Management District
MWAC	Megawatt Alternating Current
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO ₂	Nitrogen dioxide
NO _x	Nitric oxides
O ₃	Ozone
PM	Particulate matter
PM ₁₀	Coarse particulate matter
PM _{2.5}	Fine particulate matter
ppb	Parts per billion
Project	NorthStar 2 Project
PV	Photovoltaic
ROGs	Reactive organic gases
SB	Senate Bill
SCAQMD	South Coast Air Quality Management
SIP	State Implementation Plan
SO ₂	Sulfur dioxide
SO _x	Sulfur oxides
SR	State Route
SRA	Source receptor area
SSAB	Salton Sea Air Basin
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compound
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

This report documents the results of an assessment of both air quality and greenhouse gas (GHG) emissions completed for the NorthStar 2 Solar Energy Project and Battery Electric Storage System (BESS) (Project), which includes the construction of a 130-megawatt (MW) alternating current solar field and a 175 MW BESS, on approximately 614 acres of vacant land on two parcels in Imperial County, California (APN 039-140-013, 460 acres, and APN 039-140-014, 154 acres). This assessment was prepared using methodologies and assumptions recommended in the rules and regulations promulgated by the Imperial County Air Pollution Control District (ICAPCD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations.

1.1 Project Overview

The Project proposes to construct a 130-megawatt (MW) alternating current solar field, consisting of 289,800 tracker modules in 9,660 strings and associated collector and inverter facilities, and a 175 MW BESS, on approximately 614 acres of vacant land. The Project would connect to the grid offsite through an approximately 1.25-mile gen-tie line to the 230 kV KN transmission line near the East Highland Canal. Operational water supply for the Project would be trucked in from offsite over the life of the Project. Neither parcel is within the County's Renewable Energy and Transmission (RE) Element. An amendment to the County's General Plan will be needed to include and classify the Project Site within the RE Overlay Zone. Additionally, a CUP to allow construction and operation of the solar energy generation facility with battery storage within the RE Overlay Zone will be required to implement the Project.

1.2 Project Location

The total combined Project Site, consisting of two separate parcels of 154 acres and 460 acres in size, spans approximately 614 acres on land between the East Highline Canal and Coachella Canal, abutting State Route 78 on the Site's southern boundary and approximately 13 miles east of Brawley. The Site is currently vacant, undeveloped land, and is surrounded by Open Space on all sides. The California Department of Conservation's Imperial County Important Farmland Map (2018) categorizes the parcels as "Other Land," indicating that they are not considered important farmland under any category (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance).

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Salton Sea Air Basin (SSAB), which encompasses the Project Site, pursuant to the regulatory authority of the ICAPCD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 Salton Sea Air Basin

The California Air Resources Board (CARB) divides the State into air basins that share similar meteorological and topographical features. Imperial County, which extends over 4,482 square miles in the southeastern corner of California, lies in the SSAB, which includes the Imperial Valley and the central part of Riverside County, including the Coachella Valley. The basin is characterized by the large-scale sinking and warming of air within the semi-permanent subtropical high-pressure center over the Pacific Ocean. The elevation in Imperial County ranges from about 230 feet below sea level in the Salton Sea to more than 2,800 feet on the mountain summits to the east.

2.1.1.1 Temperature and Precipitation

The flat terrain near the Salton Sea, intense heat from the sun during the day, and strong radiational cooling at night create deep convective thermals during the daytime and equally strong surface-based temperature inversions at night. The temperature inversions and light nighttime winds trap any local air pollution emissions near the ground. The area is subject to frequent hazy conditions at sunrise, followed by rapid daytime dissipation as winds pick up and the temperature warms. The lack of clouds and atmospheric moisture creates strong diurnal and seasonal temperature variations ranging from an average summer maximum of 108 degrees Fahrenheit (° F) down to a winter morning minimum of 38° F. The most pleasant weather occurs from about mid-October to early May when daily highs are in the 70s and 80s with very infrequent cloudiness or rainfall. Imperial County experiences rainfall on an average of only four times per year (>0.10 inches in 24 hours). The local area usually has three days of rain in winter and one thunderstorm day in August. The annual rainfall in this region is less than three inches per year (ICAPCD 2010).

2.1.1.2 Wind

Winds in the area are driven by a complex pattern of local, regional and global forces, but primarily reflect the temperature difference between the cool ocean to the west and the heated interior of the entire

desert southwest. For much of the year, winds flow predominantly from the west to the east. In summer, intense solar heating in the Imperial Valley creates a more localized wind pattern, as air comes up from the southeast via the Gulf of California. During periods of strong solar heating and intense convection, turbulent motion creates good mixing and low levels of air pollution. However, even strong turbulent mixing is insufficient to overcome the limited air pollution controls on sources in the Mexicali, Mexico area. Imperial County is predominately agricultural land. This is a factor in the cumulative air quality of the SSAB. The agricultural production generates dust and small particulate matter through the use of agricultural equipment on unpaved roads, land preparation, and harvest practices. The Imperial County experiences unhealthy air quality from photochemical smog and from dust due to extensive surface disturbance and the very arid climate (ICAPCD 2010).

2.1.1.3 Inversion

The entire county is affected by inversion layers, where warm air overlays cooler air. Inversion layers trap pollutants close to the ground. In the winter, these pollutant-trapping, ground-based inversions are formed during windless, clear-sky conditions, as cold air collects in low-lying areas such as valleys and canyons. Imperial County experiences surface inversions almost every day of the year. Due to strong surface heating, these inversions are usually broken allowing pollutants to be more easily dispersed (ICAPCD 2010).

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O₃), coarse particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects		
Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO ₂	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O ₃	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N ₂ O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM ₁₀ & PM _{2.5}	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO ₂	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

2.1.2.1 Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SSAB are in compliance with the state and federal one- and eight-hour standards.

2.1.2.2 Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous

compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO₂, attribute to the formation of O₃ and PM_{2.5}. Epidemiological studies have also shown associations between NO₂ concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.2.3 Ozone

O₃ is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O₃ to form. Ground-level O₃ is the primary constituent of smog. Because O₃ formation occurs over extended periods of time, both O₃ and its precursors are transported by wind and high O₃ concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O₃ levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O₃ exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.2.4 Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM₁₀) and small than or equal to 2.5 microns in diameter (PM_{2.5}). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM₁₀ is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM₁₀ generally settles out of the atmosphere rapidly and is not readily transported over large distances. PM_{2.5} is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. PM_{2.5} can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high PM_{2.5} and PM₁₀ levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM₁₀ and PM_{2.5}. People with influenza, chronic respiratory

and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM₁₀ and PM_{2.5}. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

2.1.3.1 Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.4 Ambient Air Quality

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O₃, PM₁₀ and PM_{2.5} are the pollutant species most potently affecting the Project region. As described in detail below, the Project region is designated as a nonattainment area for the federal O₃ and PM_{2.5} standards and is also a nonattainment area for the state standards for O₃ and PM₁₀ (CARB 2019). The Niland-English Road air quality monitoring station (7711 English Road, Niland), located approximately 23.0 miles northwest of the Project Site, monitors ambient concentrations of O₃ and PM₁₀. The Brawley-Main Street 2 air quality monitoring station (220 Main Street, Brawley), located 15.0 miles west of the Project Site, monitors ambient concentrations of PM_{2.5}. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered “generally” representative of ambient concentrations in the Project Area.

Table 2-2 summarizes the published data concerning O₃, PM_{2.5} and PM₁₀ from the Niland-English Road and Brawley-Main Street 2 monitoring stations for each year that the monitoring data is provided. O₃, PM₁₀ and PM_{2.5} are the pollutant species most potently affecting the Project region.

Table 2-2. Summary of Ambient Air Quality Data			
Pollutant Standards	2018	2019	2020
O₃- Niland-English Road			
Max 1-hour concentration (ppm)	0.060	0.060	0.054
Max 8-hour concentration (ppm) (state/federal)	0.055 / 0.055	0.055 / 0.054	0.046 / 0.045
Number of days above 1-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
PM₁₀- Niland-English Road			
Max 24-hour concentration (µg/m ³) (state/federal)	333.8 / 331.5	156.3 / 155.7	241.3 / 239.8
Number of days above 24-hour standard (state/federal)	* / 10.1	49.3 / 1.0	68.9 / 1.0
PM_{2.5}- Brawley-Main Street			
Max 24-hour concentration (µg/m ³) (state/federal)	55.1 / 55.1	28.9 / 28.9	23.7 / 23.7
Number of days above federal 24-hour standard	6.1	0	0

Source: CARB 2021a

µg/m³ = micrograms per cubic meter; ppm = parts per million

* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O₃, PM₁₀ and PM_{2.5} and those based on annual averages or arithmetic mean) are not to be exceeded more than once

per year. The NAAQS for O₃, PM₁₀, and PM_{2.5} are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the portion of the SSAB encompassing the Project Site is included in Table 2-3.

Pollutant	State Designation	Federal Designation
O ₃	Nonattainment	Nonattainment
PM ₁₀	Nonattainment	Attainment
PM _{2.5}	Attainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO ₂	Attainment	Unclassified/Attainment
SO ₂	Attainment	Unclassified/Attainment

Source: CARB 2019

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O₃ and PM_{2.5} standards and is also a nonattainment area for the state standards for O₃ and PM₁₀ (CARB 2019).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest existing noise-sensitive land use to the Project Site is a single-family residence located approximately 2.5 miles from the western boundary of the NorthStar 2 Project boundary.

2.2 Regulatory Framework

2.2.1 Federal

2.2.1.1 Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO₂) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO₂.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SSAB for the criteria pollutants.

2.2.2 State

2.2.2.1 California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

2.2.2.2 California State Implementation Plan

The CCAA (and its subsequent amendments) requires the state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS

revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

Local air districts, such as the ICAPCD, prepare air quality attainment plans or air quality management plans and submit them to CARB for review, approval, and incorporation into the applicable SIP. The air districts develop the strategies stated in the SIPs for achieving air quality standards on a regional basis.

For 8-Hour O₃, the ICAPCD adopted the 2017 8-hour Ozone State Implementation Plan in October 2018. The plan includes control measures which are an integral part of how the ICAPCD currently controls the ROG and NO_x emissions within the O₃ nonattainment areas. The overall strategy includes programs and control measures which represent the implementation of Reasonable Available Control Technology (40 CFR 51.912) and the assurance that stationary sources maintain a net decrease in emissions.

For PM₁₀, the ICAPCD adopted the PM₁₀ State Implementation Plan in 2018, which maintained previously adopted fugitive dust control measures (Regulation VIII). The USEPA had previously approved Regulation VIII fugitive dust rules into the Imperial County portion of the California SIP in 2013.

For PM_{2.5}, the ICAPCD adopted the PM_{2.5} SIP in April 2018. This SIP concluded that the majority of the PM_{2.5} emissions resulted from transport in nearby Mexico. Specifically, the SIP demonstrates attainment of the 2006 PM_{2.5} NAAQS "but for" transport of international emissions from Mexicali, Mexico. In accordance with the CCAA, the PM_{2.5} SIP satisfies the attainment demonstration requirement satisfying the provisions of the CCAA.

The ICAPCD is working cooperatively with counterparts from Mexico to implement emissions reductions strategies and projects for air quality improvements at the border. The two countries strive to achieve these goals through local input from states, County governments, and citizens. Within the Mexicali and Imperial Valley area, the Air Quality Task Force (AQTF) has been organized to address those issues unique to the border region known as the Mexicali/Imperial air shed. The AQTF membership includes representatives from Federal, State, and local governments from both sides of the border, as well as representatives from academia, environmental organizations, and the general public. This group was created to promote regional efforts to improve the air quality monitoring network, emissions inventories, and air pollution transport modeling development, as well as the creation of programs and strategies to improve air quality.

2.2.2.3 Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is

no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 Local

2.2.3.1 Imperial County Air Pollution Control District

The ICAPCD is the local air quality agency and shares responsibility with CARB for ensuring that state and federal ambient air quality standards are achieved and maintained in the SSAB. Furthermore, ICAPCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural burning. Other ICAPCD responsibilities include monitoring ambient air quality, preparing clean air plans, planning activities such as modeling and maintenance of the emission inventory, and responding to citizen air quality complaints.

To achieve and maintain ambient air quality standards, the ICAPCD has adopted various rules and regulations for the control of airborne pollutants. The ICAPCD Rules and Regulations that are applicable to the Proposed Project include, but are not limited to, ICAPCD Regulation VIII (Fugitive Dust Rules). The purpose of this regulation is to reduce the amount of PM₁₀ entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM₁₀ emissions. Regulation VIII requires the Project to adopt best available control measures to minimize emissions from surface-disturbing activities. These measures include the following (ICAPCD 2017):

- All disturbed areas, including bulk material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover.
- All on-site and off-site unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, or dust suppressants.
- All unpaved traffic areas of 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- ☐ The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.
- ☐ All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- ☐ Bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.
- ☐ The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

In addition, there are other ICAPCD rules and regulations, not detailed here, which may apply to the Proposed Project, but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1. Conflict with or obstruct implementation of any applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

2.3.1.1 Imperial County Air Pollution Control District Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (ICAPCD) may be relied upon to make the above determinations. The ICAPCD has identified significance thresholds for use in evaluating project impacts under CEQA. Accordingly, the ICAPCD-

recommended thresholds of significance are used to determine whether implementation of the proposed Project would result in a significant air quality impact. Significance thresholds for evaluation construction and operational air quality impacts are listed in Table 2-4.

Criteria Pollutant and Precursors	Construction Activities	Operations	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	
		Tier I Threshold	Tier II Threshold
ROG	75	<137	>137
NO _x	100	<137	>137
PM ₁₀	150	<150	>150
PM _{2.5}	N/A	<550	>550
CO	550	<550	>550
SO ₂	N/A	<150	>150

Source: ICAPCD 2017

Projects that are predicted to exceed Tier I thresholds require implementation of applicable ICAPCD standard mitigation measures to be considered less than significant. Projects exceeding Tier II thresholds are required to implement applicable ICAPCD standard mitigation measures, as well as applicable discretionary mitigation measures. Projects that exceed the Tier II thresholds after implementation of standard and discretionary mitigation measures would be considered to have a potentially significant impact to human health and welfare.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

2.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the ICAPCD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Imperial County. Operational air pollutant emissions were based on the Project Site plans.

2.3.3 Impact Analysis

2.3.3.1 Project Construction-Generated Criteria Air Quality Emissions

Emissions associated with Project implementation would be temporary and short-term but have the potential to represent a significant air quality impact. Two basic sources of short-term emissions will be generated through Project implementation: operation of the heavy-duty equipment (i.e., excavators, loaders, haul trucks) and the creation of fugitive dust during clearing and grading. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Construction activities would be subject to ICAPCD Regulation VIII which, as previously described, requires taking reasonable precautions to reduce the amount of PM₁₀ entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM₁₀ emissions. Regulation VIII requires the Project to adopt best available control measures to minimize emissions from surface-disturbing activities to comply with ICAPCD Regulation VIII (Fugitive Dust Rules).

Emissions associated with Project off-road equipment, worker commute trips, and ground disturbance were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment A for more information regarding the construction assumptions, including types of construction equipment used and Project duration used in this analysis.

Predicted maximum daily emissions attributable to Project construction are summarized in Table 2-5. Such emissions are short-term and of temporary duration, lasting only as long as Project construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the ICAPCD thresholds of significance.

Table 2-5. Project Construction-Generated Emissions						
Construction Year	Pollutant (pounds per day)					
	ROG	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Construction Year One	6.26	65.75	48.76	0.11	19.97	9.78
Construction Year Two	5.67	57.67	47.06	0.11	19.58	9.41
Construction Year Three	4.01	37.71	37.71	0.07	3.68	1.79
ICAPCD Significance Threshold	75	100	550	N/A	150	N/A
Exceed ICAPCD Threshold?	No	No	No	No	No	No

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Pounds per day taken from the season with the highest output.

As shown in Table 2-5, emissions generated during Project construction would not exceed the ICAPCD significance threshold. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

2.3.3.2 Operational Criteria Air Quality Emissions

Although limited, implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM₁₀, PM_{2.5}, CO, and SO₂ as well as O₃ precursors such as ROG and NO_x. Project-generated increases in emissions would be predominately associated with motor vehicle use for routine maintenance work, site security, and trucking in water. Long-term operational emissions attributable to the Project are identified in Table 2-6 and compared to the operational significance thresholds promulgated by the ICAPCD.

Table 2-6. Operational-Related Emissions (Regional Significance Analysis)						
Emission Source	Pollutant (pounds per day)					
	ROG	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Summer Emissions						
Area	12.54	0.00	0.06	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.01	0.51	0.17	0.00	0.09	0.03
Total:	13.92	0.51	0.23	0.00	0.09	0.03
<i>ICAPCD Significance Threshold</i>	<i>137</i>	<i>137</i>	<i>150</i>	<i>550</i>	<i>550</i>	<i>150</i>
Exceed ICAPCD Significance Threshold?	No	No	No	No	No	No
Winter Emissions						
Area	12.54	0.00	0.06	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.01	0.56	0.17	0.00	0.09	0.03
Total:	12.55	0.56	0.24	0.00	0.09	0.03
<i>ICAPCD Significance Threshold</i>	<i>137</i>	<i>137</i>	<i>150</i>	<i>550</i>	<i>550</i>	<i>150</i>
Exceed ICAPCD Significance Threshold?	No	No	No	No	No	No

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Operational emissions account for six heavy-duty truck vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips.

As shown in Table 2-6, the Project's emissions would not exceed any ICAPCD's thresholds for any criteria air pollutants during operation. Additionally, the purpose of the Project is the operation of a renewable energy and storage facility. Once in operation, it will decrease the need for energy from fossil fuel-based power plants in the state (see Table 2-8). Thus, once operational the Project would represent a beneficial impact to air quality.

2.3.3.3 Conflict with an Applicable Air Quality Management Plan

As previously described, the Project region is classified as nonattainment for federal O₃ and PM_{2.5} standards (CARB 2019). The USEPA, under the provisions of the CAA, requires each state with regions that have not attained the federal air quality standards to prepare a SIP, detailing how these standards are to be met in each local area. The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. CARB is the lead agency for developing the SIP in California. Local air districts, such as the ICAPCD, prepare air quality attainment plans or air quality management plans and submit

them to CARB for review, approval, and incorporation into the applicable SIP. The air districts develop the strategies stated in the SIPs for achieving air quality standards on a regional basis.

The region's SIP is constituted of the ICAPCD air quality plans: 2018 PM₁₀ SIP, the 2018 Annual PM_{2.5} SIP, the 2017 8-Hour Ozone SIP, 2013 24-Hour PM_{2.5} SIP, the 2009 1997 8-hour Ozone RACT SIP, the 2009 PM₁₀ SIP and the 2008 Ozone Early Progress Plans. Project compliance with all of the ICAPCD rules and regulations results in conformance with the ICAPCD air quality plans. These air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. These SIP plans and associated control measures are based on information derived from projected growth in Imperial County in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on the general plans developed by Imperial County and the incorporated cities in the county.

As previously described, the Project consists of the construction of a 130-megawatt (MW) alternating current solar field, consisting of 289,800 tracker modules in 9,660 strings and associated collector and inverter facilities, and a 175 MW BESS, on approximately 614 acres of vacant land. The Project would not result in population growth and would not cause an increase in currently established population projections. The Project does not include residential development or large local or regional employment centers, and thus would not result in significant population or employment growth.

Furthermore, the operation of the Project would create renewable energy over its planned lifetime and decrease the need for energy from fossil fuel-based power plants in the state, which is considered a beneficial impact to statewide air quality. The energy produced by the Project would displace the criteria pollutant emissions which would otherwise be produced by existing business-as-usual power generation resources (including natural gas and coal).

Table 2-7 shows the emissions that would potentially be displaced by the Proposed Project. Note that this estimate only includes that associated with the combustion of fossil fuels; it does not include the vehicle trips associated with the Project's operations, and it similarly does not include operational employee trips associated with natural gas or coal combustion nor the emissions associated with extracting and transporting those power sources. In addition, this estimate only includes the displacement of that portion of the California market that comes from fossil fuels and does not include the approximate 50 percent of the California electricity generated by non-combustion sources (wind, solar, nuclear, hydro-electric) (California Energy Commission [CEC] 2020). Displacement of fossil fuel emissions has a direct beneficial effect on human health for those receptors downwind of the location of the fossil fuel power plants.

Table 2-7. Proposed Project Displaced Criteria Pollutant Emissions (Tons)						
Construction Year	Emissions (Tons)					
	ROG	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Emissions Displaced Annually (tons)						
Displaced Natural Gas-Source Emissions	0.00	2.78	0.84	1.91	2.64	1.07
Displaced Coal-Source Emissions	0.00	18.16	0.76	0.86	0.13	0.09
Total	0.00	20.94	1.60	2.77	2.77	1.16
Emissions Displaced over 30 Years (tons)						
Total	0	628.38	48.01	83.24	83.11	34.78

Source: Displaced emissions calculated by ECORP using USEPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995; 2015. See Attachment B.

Notes: In order to provide a conservative analysis, the proposed Project is assumed to generate electricity 25 percent of the time available (2,190 hours annually). Heat Rate indicates the energy generator efficiency of existing fossil-fuel based energy generators. The heat rate of a power plant measures the amount of fuel used to generate one unit of electricity. Power plants with lower heat rates are more efficient than plants with higher heat rates. The CEC's "Updated Thermal Power Plant Efficiency Measures and Operational Characteristics for Production Cost Modeling" (2019) estimates heat rates and operating ranges for thermal power plants supplying energy to California. The average heat rate of power plants types are as follows:

**Steam Boiler fueled by coal: 10,800 heat rate **Steam Boiler fueled by natural gas: 10,200 heat rate **Gas Turbine: 10,100 heat rate **Combined natural gas Boiler and Turbine: 7,640 heat rate.

By omitting steam boilers fueled by coal since so little of California's energy is derived from coal, the average heat rate = 9,313 $[(10,100 + 10,200 + 7,640) \div 3 = 9,313]$. 130 MW (284,700,00 annual kWh) x 9,313 heat rate = 2,651,411,100,000 Btu displaced from fossil fuel production. Fossil fuel-based energy consumption in California is predominately derived from natural gas (37.06 percent). Coal constitutes 2.74 percent of all fossil fuel-based energy. Therefore, 1,124,728,588,620 of the displaced Btu is displaced natural gas consumption and 72,648,664,140 of the displaced Btu is displaced coal. The heat content of coal is assumed at 24 million Btu per ton of coal burned. At a rate of 24 million Btu per ton of coal burned, the Project would displace 3,027 tons of burned coal annually.

As shown, the Project would potentially displace approximately 628 tons of NO_x, 48 tons of CO, 83 tons of SO₂, 83 tons of PM₁₀, and 34 tons of PM_{2.5} over the course of 30 years. Furthermore, as demonstrated in Table 2-6 and Table 2-7, the Project would not exceed the applicable significance thresholds for construction or operational-source emissions.

2.3.3.4 Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest existing

sensitive land use to the Project Site is a single-family residence located approximately 2.5 miles from the western boundary of the Project boundary.

Construction-Generated Air Contaminants

Construction of the Project would result in temporary, short-term proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NO_x, CO, and PM₁₀ from the exhaust of off-road, heavy-duty diesel equipment for Project construction; soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the SSAB which encompasses the Project Area is designated as a nonattainment area for federal O₃ and PM_{2.5} standards and is also a nonattainment area for the state standards for O₃ and PM₁₀ (CARB 2019). Thus, existing O₃ and PM₁₀ levels in the SSAB are at unhealthy levels during certain periods. However, as shown in Table 2-5, the Project would not exceed the ICAPCD significance thresholds for construction emissions.

The health effects associated with O₃ are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O₃ precursor emissions (ROG or NO_x) in excess of the ICAPCD thresholds, the Project is not anticipated to substantially contribute to regional O₃ concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve activities that would result in CO emissions in excess of the ICAPCD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM₁₀ and PM_{2.5}) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction-type activity, DPM is the primary TAC of concern. PM₁₀ exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. Most PM₁₀ exhaust derives from combustion, such as use of gasoline and diesel fuels by motor vehicles. As with O₃ and NO_x, the Project would not generate emissions of PM₁₀ or PM_{2.5} that would exceed the ICAPCD's thresholds. Accordingly, the Project's PM₁₀ and PM_{2.5} emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There would be no stationary sources associated Project operations; nor would the Project attract

additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at the nearby sensitive receptor as the predominant operational emissions associated with the Proposed Project would be routine maintenance work, water deliveries, and site security. Therefore, the Project would not be a substantial source of TACs. The Project will not result in a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SSAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD's) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire

Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD), the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The Proposed Project is anticipated to result in no more than 6 daily traffic trips. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values.

2.3.3.5 Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the Project Area, which is generally

devoid of surrounding receptors. Therefore, odors generated during Project construction would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified as being associated with odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO₂, methane (CH₄), and N₂O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH₄ traps over 25 times more heat per molecule than CO₂, and N₂O absorbs 298 times more heat per molecule than CO₂ (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e), which weight each gas by its global warming potential. Expressing GHG emissions in CO₂e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO₂

emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013).

Greenhouse Gas	Description
CO ₂	Carbon dioxide is a colorless, odorless gas. CO ₂ is emitted in a number of ways, both naturally and through human activities. The largest source of CO ₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO ₂ emissions. The atmospheric lifetime of CO ₂ is variable because it is so readily exchanged in the atmosphere. ¹
CH ₄	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH ₄ to the atmosphere. Natural sources of CH ₄ include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH ₄ is about 12 years. ²
N ₂ O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N ₂ O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N ₂ O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. ³

Sources: ¹USEPA 2016a, ²USEPA 2016b, ³USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2021, CARB released the 2021 edition of the California GHG inventory covering calendar year 2019 emissions. In 2019, California emitted 418.2 million gross metric tons of CO₂e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for approximately 40 percent of total GHG emissions in the State. When emissions from extracting, refining and moving transportation fuels in California are included, transportation is responsible for over 50 percent of statewide emissions in 2019. Continuing the downward trend from 2018, transportation emissions decreased 3.5 million metric tons of CO₂e in 2019,

only being outpaced by electricity, which reduced emissions by 4.3 million metric tons of CO₂e in 2019. Emissions from the electricity sector account for 14 percent of the inventory and have shown a substantial decrease in 2019 due to increases in renewables. California's industrial sector accounts for the second largest source of the State's GHG emissions in 2019, accounting for 21 percent (CARB 2021b).

3.2 Regulatory Framework

3.2.1 State

3.2.1.1 Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

3.2.1.2 Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the State, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

3.2.1.3 Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

3.2.1.4 Senate Bill 100 of 2018

In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to GHG emissions if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The Appendix G thresholds for GHG's do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead

agency to adopt such thresholds is supported by substantial evidence” (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA’s requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines § 15064(h)(3), a project’s incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a “water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions.” Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project’s GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The ICAPCD has not adopted a GHG significance threshold yet recommends the 100,000-metric ton of CO₂e threshold established by the Mojave Desert Air Quality Management District (MDAQMD). As previously described, Section 15064.7(c) of the CEQA Guidelines specifies that “[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence” (14 CCR 15064.7(c)). This ICAPCD-recommended threshold is appropriate as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Imperial County. Therefore, the 100,000-metric ton of CO₂e threshold is appropriate for this analysis.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 214, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California’s Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that “[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available

financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

3.3.2 Methodology

Where GHG emission quantification was required, emissions were modeled using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions were calculated using CalEEMod model defaults for Imperial County. Operational GHG emissions were based on the Project Site plans.

3.3.3 Impact Analysis

3.3.3.1 Generation of GHG Emissions

Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Consistent with SCAQMD recommendations, Project construction GHG emissions have been amortized over the expected life of the Project, which is considered to be 30 years for a solar energy generation facility. Once construction is complete, the generation of these GHG emissions would cease.

Emissions Source	CO₂e (Metric Tons/Year)
Construction Year One	167
Construction Year Two	1,087
Construction Year Three	76
<i>Significance Threshold</i>	<i>100,000</i>
Exceed Significance Threshold?	No

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

As shown in Table 3-2, Project would result in the generation of approximately 167 metric tons of CO₂e in the first year of construction, 1,087 metric tons in the second year of construction, and 76 metric tons in

the third year of construction. Therefore, Project GHG emissions would not exceed the significance threshold.

Additionally, the Project proposes a solar energy generation facility intended to generate renewable energy. Solar plants generate far less GHG life-cycle emissions (approximately 83 to 94 percent less) than fossil-fueled energy plants. As identified in Table 3-5 below, the Project would potentially displace approximately 69,186 metric tons of CO_{2e} per year, and approximately 2,075,575 metric tons of CO_{2e} over the course of 30 years, which is considerably more than would be generated during construction.

Operations

Operation of the Project would result in an increase in GHG emissions solely associated with motor vehicle trips. Long-term GHG emissions attributed to operations of the Project are identified in Table 3-3.

Table 3-3. Operational-Related Greenhouse Gas Emissions	
Emission Source	CO_{2e} (Metric Tons/ Year)
Area Source	0
Energy	0
Mobile	3,529
Waste	0
Water	0
Total	3,529
Significance Threshold	100,000
Exceed Significance Threshold?	No

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Operational emissions account for six heavy-duty truck vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips.

As shown in Table 3-3, operational-generated emissions would not exceed the significance threshold of 100,000 metric tons of CO_{2e} annually.

3.3.3.2 Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The Project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The Proposed Project is subject to compliance with SB 32. As discussed previously, the Proposed Project-generated GHG emissions would not surpass either the ICAPCD-recommended GHG significance threshold, which was prepared with the purpose of complying with statewide GHG-reduction efforts. Additionally, once construction is complete, the Project would be a producer of renewable energy, which generates substantially less GHG emissions compared with the more common types of fossil-fueled energy generation facilities.

GHG emissions generated by energy sources account for all stages of the life cycle (including mining, construction, etc.), which are referred to as the cumulative GHG emissions and are usually expressed in grams of CO₂e per unit of busbar electricity (i.e., gCO₂/kWh_e). When comparing various fossil-fueled energy generators, the GHG emissions generated are dependent on the type of fuel (i.e., gas, oil, coal). GHG emissions generated by some of the more common types of fossil-fueled plants and solar-power plants are summarized in Table 3-4.

Table 3-4. Life-Cycle Greenhouse Gas Emissions for Various Types of Energy Generators	
Fossil Fueled	
Coal	950 to 1,250 gCO ₂ e/kWh _e
Oil	500 to 1,200 gCO ₂ e/kWh _e
Gas	440 to 780 gCO ₂ e/kWh _e
Solar	43 to 73 ³ gCO ₂ e/kWh _e

Source: Weisser 2007

Notes:

1 gCO₂e/kWh_e = grams of CO₂e per unit of busbar electricity.

2 Emissions are based on lifecycle of energy source including mining, construction, operation, etc.

3 Solar PV life-cycle emissions result from using fossil-fuel-based energy to produce the materials for solar cells, modules, and systems, as well as directly from smelting, production, and manufacturing facilities.

As shown in Table 3-4, solar plants generate far less GHG life-cycle emissions (approximately 83 to 94 percent less) than fossil-fueled energy plants. Therefore, the Proposed Project would contribute to the continued reduction of GHG emissions in the interconnected California and western U.S. electricity systems, as the energy produced by the Project would displace GHG emissions that would otherwise be produced by existing business-as-usual power generation resources (including natural gas, coal, and renewable combustion resources).

Table 3-5 shows the emissions that would potentially be displaced by the Proposed Project. Note that this estimate only includes that associated with the combustion of fossil fuels; it does not include the vehicle trips associated with the Project's operations, and it similarly does not include operational employee trips associated with natural gas or coal combustion nor the emissions associated with extracting and transporting those power sources. In addition, this estimate only includes the displacement of that portion of the California market that comes from fossil fuels and does not include the approximate 50 percent of the California electricity generated by non-combustion sources (wind, solar, nuclear, hydro-electric) (CEC 2020).

Table 3-5. Proposed Project Displaced GHG Emissions (Metric Tons)				
	Emissions (Metric Tons)			
	CO₂	CH₄	N₂O	CO₂e
Emissions Displaced Annually (metric tons)				
Displaced Natural Gas-Source Emissions	61,860	0.00	0.00	61,860
Displaced Coal-Source Emissions	7,313	0.048	0.036	7,326
Total	69,173	0.048	0.036	69,186
Emissions Displaced over 30 Years (metric tons)				
Total	2,075,201	1.453	1.090	2,075,575

Source: Displaced emissions calculated by ECORP using USEPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995; 2015. See Attachment B.

Notes: In order to provide a conservative analysis, the proposed Project is assumed to generate electricity 25 percent of the time available (2,190 hours annually). Heat Rate indicates the energy generator efficiency of existing fossil-fuel based energy generators. The heat rate of a power plant measures the amount of fuel used to generate one unit of electricity. Power plants with lower heat rates are more efficient than plants with higher heat rates. The CEC's "Updated Thermal Power Plant Efficiency Measures and Operational Characteristics for Production Cost Modeling" (2019) estimates heat rates and operating ranges for thermal power plants supplying energy to California. The average heat rate of power plants types are as follows:

**Steam Boiler fueled by coal: 10,800 heat rate **Steam Boiler fueled by natural gas: 10,200 heat rate **Gas Turbine: 10,100 heat rate **Combined natural gas Boiler and Turbine: 7,640 heat rate.
By omitting steam boilers fueled by coal since so little of California's energy is derived from coal, the average heat rate = 9,313 $[(10,100 + 10,200 + 7,640) \div 3 = 9,313]$. 130 MW (284,700,00 annual kWh) x 9,313 heat rate = 2,651,411,100,000 Btu displaced from fossil fuel production. Fossil fuel-based energy consumption in California is predominately derived from natural gas (37.06 percent). Coal constitutes 2.74 percent of all fossil fuel-based energy. Therefore, 1,124,728,588,620 of the displaced Btu is displaced natural gas and unspecified nonrenewable sources consumption and 72,648,664,140 of the displaced Btu is displaced coal. The heat content of coal is assumed at 24 million Btu per ton of coal burned. At a rate of 24 million Btu per ton of coal burned, the Project would displace 3,027 tons of burned coal annually.

As shown, the Project would potentially displace approximately 69,186 metric tons of CO₂e per year, and approximately 2,075,575 metric tons of CO₂e over the course of 30 years.

While the Project would emit some GHG emissions during construction and a small amount during operations, the contribution of renewable resource energy production to meet the goals of the Renewable Portfolio Standard (Scoping Plan Measure E-3) would result in a net cumulative reduction of GHG emissions, a key environmental benefit. (Scoping Plan Measure E-3, Renewable Portfolio Standard, of the Climate Change Scoping Plan requires that all investor-owned utility companies generate 60 percent of their energy demand from renewable sources by year 2030.) Therefore, the short-term minor generation of GHG emissions during construction, which is necessary to create this new, low-GHG-emitting power-generating facility, as well as the negligible amount generated during ongoing maintenance operations, would be more than offset by GHG emission reductions associated with solar-generated energy during operation.

Increasing sources of solar energy is one of the measures identified under the Scoping Plan to reduce statewide GHG emissions. The Proposed Project would reduce GHG emissions in a manner consistent with SB 32 and other California GHG-reducing legislation by creating a new source of solar power to replace the current use of fossil-fuel power and reduce GHG emissions power generation and use.

The Project would not conflict with any applicable plan, policy, or regulation intended to reduce GHG emissions.

4.0 REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2021. California Emissions Estimator Model (CalEEMod), version 2020.4.0.

_____. 2013. Health Effects. <http://www.capcoa.org/health-effects/>.

California Air Resources Board (CARB). 2021a. Air Quality Data Statistics. <http://www.arb.ca.gov/adam/index.html>.

_____. 2021b. California Greenhouse Gas Emission Inventory 2021 Edition.

_____. 2020b. Air Quality and Land Use Handbook

_____. 2019. State and Federal Area Designation Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>.

California Energy Commission (CEC). 2020. 2020 Total System Electric Generation. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>

_____. 2019b. Updated Thermal Power Plant Efficiency Measures and Operational Characteristics for Production Cost Modeling.

Crockett, Alexander G. 2011. Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World.

Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2014 Synthesis Report: Approved Summary for Policymakers. <http://www.ipcc.ch/>.

_____. 2013. Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf.

Imperial County Air Pollution Control District (ICAPCD). 2017. *Air Quality Handbook*.

_____. 2010. *Final 2009 1997 8-Hour Ozone Modified Air Quality Management Plan*.

South Coast Air Quality Management District (SCAQMD). 2003. Air Quality Management Plan.

_____. 1992. 1992 Federal Attainment Plan for Carbon Monoxide.

U.S. Environmental Protection Agency (USEPA). 2016a. Climate Change – Greenhouse Gas Emissions: Carbon Dioxide. <http://www.epa.gov/climatechange/emissions/co2.html>.

_____. 2016b. Methane. <https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>.

_____. 2016c. Nitrous Oxide. <https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html>.

_____. 2002. Health Assessment Document for Diesel Engine Exhaust. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=300055PV.TXT>.

Weisser, Daniel. 2007. A Guide to Life-Cycle Greenhouse Gas (GHG) Emissions from Electric Supply Technologies. *Energy* 32 (9), 1543–1559.

LIST OF ATTACHMENTS

Attachment A – CalEEMod Output Files Criteria Air Pollutants & Greenhouse Gas Emissions

Attachment B – Renewable Energy Emissions Displacement

ATTACHMENT A

CalEEMod Output Files Criteria Air Pollutants & Greenhouse Gas Emissions

ATTACHMENT B

Renewable Energy Emissions Displacement

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Northstar #2
Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	614.00	Acre	614.00	26,745,840.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	3.4	Precipitation Freq (Days)	12
Climate Zone	15			Operational Year	2024

Utility Company Imperial Irrigation District

CO2 Intensity (lb/MW/hr)	189.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total days spent per phase based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Trips and VMT - Imported values based on similar solar facility projects in Imperial County

On-road Fugitive Dust - Project will be accessed directly via Highway 78.

Grading -

Vehicle Trips - Week day trip rate of 0.01 per acre assumed.

Road Dust - Project Site accessed via Highway 78

Area Coating -

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Mitigation -

Fleet Mix - all heavy duty trucks assumed to be used for operations

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehiclesSpeed	0	40
tblConstructionPhase	NumDays	10,850.00	104.00
tblConstructionPhase	NumDays	1,085.00	200.00
tblConstructionPhase	NumDays	420.00	67.00
tblFleetMix	HHD	0.02	1.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.8510e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.15	0.00
tblFleetMix	MH	3.5040e-003	0.00
tblFleetMix	MHD	8.3160e-003	0.00
tblFleetMix	OBUS	9.2500e-004	0.00
tblFleetMix	SBUS	7.6600e-004	0.00
tblFleetMix	UBUS	1.2000e-004	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	100
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	4,384.00	10.00
tblTripsAndVMT	WorkerTripNumber	11,233.00	300.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.01

2.0 Emissions Summary

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2022	0.1256	1.3163	0.8444	1.8600e-003	1.0345	0.0591	1.0936	0.3395	0.0544	0.3938	0.0000	164.7223	164.7223	0.0481	1.8900e-003	166.4871
2023	0.6667	6.2722	5.6847	0.0122	1.7043	0.2673	1.9715	0.6891	0.2462	0.9353	0.0000	1,077.0759	1,077.0759	0.3075	8.0900e-003	1,087.1744
2024	0.0487	0.3215	0.4662	8.5000e-004	0.0315	0.0161	0.0476	8.3800e-003	0.0149	0.0233	0.0000	75.1153	75.1153	0.0156	1.2100e-003	75.8659
Maximum	0.6667	6.2722	5.6847	0.0122	1.7043	0.2673	1.9715	0.6891	0.2462	0.9353	0.0000	1,077.0759	1,077.0759	0.3075	8.0900e-003	1,087.1744

Mitigated Construction

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2022	0.1256	1.3163	0.8444	1.8600e-003	1.0345	0.0591	1.0936	0.3395	0.0544	0.3938	0.0000	164.7221	164.7221	0.0481	1.8900e-003	166.4869
2023	0.6667	6.2722	5.6847	0.0122	1.7043	0.2673	1.9715	0.6891	0.2462	0.9353	0.0000	1,077.0748	1,077.0748	0.3075	8.0900e-003	1,087.1733
2024	0.0487	0.3215	0.4662	8.5000e-004	0.0315	0.0161	0.0476	8.3800e-003	0.0149	0.0233	0.0000	75.1152	75.1152	0.0156	1.2100e-003	75.8659
Maximum	0.6667	6.2722	5.6847	0.0122	1.7043	0.2673	1.9715	0.6891	0.2462	0.9353	0.0000	1,077.0748	1,077.0748	0.3075	8.0900e-003	1,087.1733

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)				Maximum Mitigated ROG + NOX (tons/quarter)								
1	6-29-2022	9-28-2022	0.2027				0.2027								
2	9-29-2022	12-28-2022	1.1499				1.1499								
3	12-29-2022	3-28-2023	2.0452				2.0452								
4	3-29-2023	6-28-2023	2.0811				2.0811								
5	6-29-2023	9-28-2023	1.8926				1.8926								
6	9-29-2023	12-28-2023	0.9774				0.9774								
7	12-29-2023	3-28-2024	0.3976				0.3976								
		Highest	2.0811				2.0811								

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**2.2 Overall Operational
Unmitigated Operational**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	Non-Biogenic CO2	Total CO2	CH4	N2O	CO2e
Area	2.2873	5.0000e-005	5.6300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.7300e-003	0.0709	0.0223	3.5000e-004	0.0114	7.9000e-004	0.0122	3.1300e-003	7.6000e-004	3.8900e-003	0.0000	33.7037	33.7037	1.0000e-004	5.3000e-003	35.2851
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2890	0.0709	0.0279	3.5000e-004	0.0114	8.1000e-004	0.0122	3.1300e-003	7.8000e-004	3.9100e-003	0.0000	33.7146	33.7146	1.3000e-004	5.3000e-003	35.2968

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	2.2873	5.0000e-005	5.6300e-003	0.0000	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.7300e-003	0.0709	0.0223	3.5000e-004	0.0114	7.9000e-004	0.0122	3.1300e-003	7.6000e-004	3.8900e-003	0.0000	33.7037	33.7037	1.0000e-004	5.3000e-003	35.2851
Waste						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2890	0.0709	0.0279	3.5000e-004	0.0114	8.1000e-004	0.0122	3.1300e-003	7.8000e-004	3.9100e-003	0.0000	33.7146	33.7146	1.3000e-004	5.3000e-003	35.2968

Percent Reduction	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/5/2022	12/6/2022	5	67	
2	Grading	Grading	12/7/2022	9/12/2023	5	200	
3	Building Construction	Building Construction	9/13/2023	2/5/2024	5	104	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 67

Acres of Grading (Grading Phase): 900

Acres of Paving: 614

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	4	8.00	158	0.38
Grading	Graders	3	8.00	187	0.41
Grading	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Pavers	1	7.00	130	0.42
Building Construction	Paving Equipment	2	7.00	132	0.36
Building Construction	Plate Compactors	4	7.00	8	0.43
Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Trenchers	2	7.00	78	0.50
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	15	38.00	10.00	0.00	10:20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	19	300.00	10.00	0.00	10:20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.4390	0.0000	0.4390	0.2256	0.0000	0.2256	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0671	0.7014	0.3899	7.8000e-004		0.0340	0.0340	0.0313	0.0000	0.0313	0.0000	68.5781	68.5781	0.0222	0.0000	69.1326
Total	0.0671	0.7014	0.3899	7.8000e-004	0.4390	0.0340	0.4730	0.2256	0.0313	0.2569	0.0000	68.5781	68.5781	0.0222	0.0000	69.1326

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**3.2 Site Preparation - 2022
Unmitigated Construction Off-Site**

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0400e-003	0.0217	7.9800e-003	1.0000e-004	3.6800e-003	3.0000e-004	3.9800e-003	1.0600e-003	2.9000e-004	1.3500e-003	0.0000	9.8846	9.8846	5.0000e-005	1.3800e-003	10.2956
Worker	1.4700e-003	9.0000e-004	0.0103	2.0000e-005	2.5800e-003	1.0000e-005	2.5900e-003	6.8000e-004	1.0000e-005	7.0000e-004	0.0000	2.0856	2.0856	8.0000e-005	7.0000e-005	2.1089
Total	2.5100e-003	0.0226	0.0183	1.2000e-004	6.2600e-003	3.1000e-004	6.5700e-003	1.7400e-003	3.0000e-004	2.0500e-003	0.0000	11.9703	11.9703	1.3000e-004	1.4500e-003	12.4045

Mitigated Construction On-Site

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.4390	0.0000	0.4390	0.2256	0.0000	0.2256	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0671	0.7014	0.3899	7.8000e-004		0.0340	0.0340	0.0313	0.0313	0.0313	0.0000	68.5780	68.5780	0.0222	0.0000	69.1325
Total	0.0671	0.7014	0.3899	7.8000e-004	0.4390	0.0340	0.4730	0.2256	0.0313	0.2569	0.0000	68.5780	68.5780	0.0222	0.0000	69.1325

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0400e-003	0.0217	7.9800e-003	1.0000e-004	3.6800e-003	3.0000e-004	3.9800e-003	1.0600e-003	2.9000e-004	1.3500e-003	0.0000	9.8846	9.8846	5.0000e-005	1.3800e-003	10.2956
Worker	1.4700e-003	9.0000e-004	0.0103	2.0000e-005	2.5800e-003	1.0000e-005	2.5900e-003	6.8000e-004	1.0000e-005	7.0000e-004	0.0000	2.0856	2.0856	8.0000e-005	7.0000e-005	2.1089
Total	2.5100e-003	0.0226	0.0183	1.2000e-004	6.2600e-003	3.1000e-004	6.5700e-003	1.7400e-003	3.0000e-004	2.0500e-003	0.0000	11.9703	11.9703	1.3000e-004	1.4500e-003	12.4045

3.3 Grading - 2022

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.5856	0.0000	0.5856	0.1111	0.0000	0.1111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0542	0.5855	0.4235	9.0000e-004		0.0247	0.0247	0.0227	0.0227	0.0227	0.0000	79.3892	79.3892	0.0257	0.0000	80.0311
Total	0.0542	0.5855	0.4235	9.0000e-004	0.5856	0.0247	0.6103	0.1111	0.0227	0.1338	0.0000	79.3892	79.3892	0.0257	0.0000	80.0311

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8000e-004	5.8200e-003	2.1400e-003	3.0000e-005	9.9000e-004	8.0000e-005	1.0700e-003	2.8000e-004	8.0000e-005	3.6000e-004	0.0000	2.6556	2.6556	1.0000e-005	3.7000e-004	2.7660
Worker	1.5000e-003	9.2000e-004	0.0106	2.0000e-005	2.6300e-003	1.0000e-005	2.6500e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	2.1292	2.1292	8.0000e-005	7.0000e-005	2.1530
Total	1.7800e-003	6.7400e-003	0.0127	5.0000e-005	3.6200e-003	9.0000e-005	3.7200e-003	9.8000e-004	9.0000e-005	1.0700e-003	0.0000	4.7848	4.7848	9.0000e-005	4.4000e-004	4.9190

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.5856	0.0000	0.5856	0.1111	0.0000	0.1111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0542	0.5855	0.4235	9.0000e-004		0.0247	0.0247		0.0227	0.0227	0.0000	79.3891	79.3891	0.0257	0.0000	80.0310
Total	0.0542	0.5855	0.4235	9.0000e-004	0.5856	0.0247	0.6103	0.1111	0.0227	0.1338	0.0000	79.3891	79.3891	0.0257	0.0000	80.0310

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8000e-004	5.8200e-003	2.1400e-003	3.0000e-005	9.9000e-004	8.0000e-005	1.0700e-003	2.8000e-004	8.0000e-005	3.6000e-004	0.0000	2.6556	2.6556	1.0000e-005	3.7000e-004	2.7660
Worker	1.5000e-003	9.2000e-004	0.0106	2.0000e-005	2.6300e-003	1.0000e-005	2.6500e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	2.1292	2.1292	8.0000e-005	7.0000e-005	2.1530
Total	1.7800e-003	6.7400e-003	0.0127	5.0000e-005	3.6200e-003	9.0000e-005	3.7200e-003	9.8000e-004	9.0000e-005	1.0700e-003	0.0000	4.7848	4.7848	9.0000e-005	4.4000e-004	4.9190

3.3 Grading - 2023

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					1.5732	0.0000	1.5732	0.6540	0.0000	0.6540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4963	5.1977	4.1424	9.1400e-003		0.2139	0.2139	0.1968		0.1968	0.0000	802.7164	802.7164	0.2596	0.0000	809.2067
Total	0.4963	5.1977	4.1424	9.1400e-003	1.5732	0.2139	1.7871	0.6540	0.1968	0.8508	0.0000	802.7164	802.7164	0.2596	0.0000	809.2067

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1900e-003	0.0455	0.0193	2.7000e-004	9.9900e-003	4.5000e-004	0.0104	2.8800e-003	4.3000e-004	3.3100e-003	0.0000	25.9428	25.9428	1.0000e-004	3.5800e-003	27.0113
Worker	0.0140	8.2100e-003	0.0969	2.3000e-004	0.0266	1.3000e-004	0.0268	7.0700e-003	1.2000e-004	7.1900e-003	0.0000	20.8328	20.8328	7.0000e-004	6.8000e-004	21.0528
Total	0.0162	0.0537	0.1163	5.0000e-004	0.0366	5.8000e-004	0.0372	9.9500e-003	5.5000e-004	0.0105	0.0000	46.7756	46.7756	8.0000e-004	4.2600e-003	48.0641

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					1.5732	0.0000	1.5732	0.6540	0.0000	0.6540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4963	5.1977	4.1424	9.1400e-003		0.2139	0.2139	0.1968	0.1968	0.1968	0.0000	802.7154	802.7154	0.2596	0.0000	809.2058
Total	0.4963	5.1977	4.1424	9.1400e-003	1.5732	0.2139	1.7871	0.6540	0.1968	0.8507	0.0000	802.7154	802.7154	0.2596	0.0000	809.2058

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1900e-003	0.0455	0.0193	2.7000e-004	9.9900e-003	4.5000e-004	0.0104	2.8800e-003	4.3000e-004	3.3100e-003	0.0000	25.9428	25.9428	1.0000e-004	3.5800e-003	27.0113
Worker	0.0140	8.2100e-003	0.0969	2.3000e-004	0.0266	1.3000e-004	0.0268	7.0700e-003	1.2000e-004	7.1900e-003	0.0000	20.8328	20.8328	7.0000e-004	6.8000e-004	21.0528
Total	0.0162	0.0537	0.1163	5.0000e-004	0.0366	5.8000e-004	0.0372	9.9500e-003	5.5000e-004	0.0105	0.0000	46.7756	46.7756	8.0000e-004	4.2600e-003	48.0641

3.4 Building Construction - 2023

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.1059	0.9736	1.0897	1.7000e-003		0.0522	0.0522		0.0483	0.0483	0.0000	145.9786	145.9786	0.0447	0.0000	147.0961
Total	0.1059	0.9736	1.0897	1.7000e-003		0.0522	0.0522		0.0483	0.0483	0.0000	145.9786	145.9786	0.0447	0.0000	147.0961

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4000e-004	0.0195	8.2800e-003	1.2000e-004	4.2800e-003	1.9000e-004	4.4700e-003	1.2300e-003	1.8000e-004	1.4200e-003	0.0000	11.1183	11.1183	4.0000e-005	1.5300e-003	11.5763
Worker	0.0474	0.0278	0.3280	7.7000e-004	0.0901	4.5000e-004	0.0906	0.0239	4.1000e-004	0.0243	0.0000	70.4871	70.4871	2.3700e-003	2.3000e-003	71.2313
Total	0.0483	0.0473	0.3363	8.9000e-004	0.0944	6.4000e-004	0.0951	0.0252	5.9000e-004	0.0258	0.0000	81.6054	81.6054	2.4100e-003	3.8300e-003	82.8075
MT/yr																

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Off-Road	0.1059	0.9736	1.0897	1.7000e-003		0.0522	0.0522		0.0483	0.0483	0.0000	145.9784	145.9784	0.0447	0.0000	147.0959
Total	0.1059	0.9736	1.0897	1.7000e-003		0.0522	0.0522		0.0483	0.0483	0.0000	145.9784	145.9784	0.0447	0.0000	147.0959
MT/yr																

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4000e-004	0.0195	8.2800e-003	1.2000e-004	4.2800e-003	1.9000e-004	4.4700e-003	1.2300e-003	1.8000e-004	1.4200e-003	0.0000	11.1183	11.1183	4.0000e-005	1.5300e-003	11.5763
Worker	0.0474	0.0278	0.3280	7.7000e-004	0.0901	4.5000e-004	0.0906	0.0239	4.1000e-004	0.0243	0.0000	70.4871	70.4871	2.3700e-003	2.3000e-003	71.2313
Total	0.0483	0.0473	0.3363	8.9000e-004	0.0944	6.4000e-004	0.0951	0.0252	5.9000e-004	0.0258	0.0000	81.6054	81.6054	2.4100e-003	3.8300e-003	82.8075

3.4 Building Construction - 2024

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0337	0.3068	0.3627	5.7000e-004		0.0159	0.0159		0.0148	0.0148	0.0000	48.6658	48.6658	0.0149	0.0000	49.0380
Total	0.0337	0.3068	0.3627	5.7000e-004		0.0159	0.0159		0.0148	0.0148	0.0000	48.6658	48.6658	0.0149	0.0000	49.0380

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-004	6.4700e-003	2.6500e-003	4.0000e-005	1.4300e-003	6.0000e-005	1.4900e-003	4.1000e-004	6.0000e-005	4.7000e-004	0.0000	3.6563	3.6563	1.0000e-005	5.0000e-004	3.8060
Worker	0.0147	8.2100e-003	0.1009	2.5000e-004	0.0300	1.4000e-004	0.0302	7.9700e-003	1.3000e-004	8.1000e-003	0.0000	22.7932	22.7932	7.1000e-004	7.1000e-004	23.0219
Total	0.0150	0.0147	0.1035	2.9000e-004	0.0315	2.0000e-004	0.0317	8.3800e-003	1.9000e-004	8.5700e-003	0.0000	26.4495	26.4495	7.2000e-004	1.2100e-003	26.8280

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0337	0.3068	0.3627	5.7000e-004		0.0159	0.0159		0.0148	0.0148	0.0000	48.6658	48.6658	0.0149	0.0000	49.0379
Total	0.0337	0.3068	0.3627	5.7000e-004		0.0159	0.0159		0.0148	0.0148	0.0000	48.6658	48.6658	0.0149	0.0000	49.0379

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-004	6.4700e-003	2.6500e-003	4.0000e-005	1.4300e-003	6.0000e-005	1.4900e-003	4.1000e-004	6.0000e-005	4.7000e-004	0.0000	3.6563	3.6563	1.0000e-005	5.0000e-004	3.8060
Worker	0.0147	8.2100e-003	0.1009	2.5000e-004	0.0300	1.4000e-004	0.0302	7.9700e-003	1.3000e-004	8.1000e-003	0.0000	22.7932	22.7932	7.1000e-004	7.1000e-004	23.0219
Total	0.0150	0.0147	0.1035	2.9000e-004	0.0315	2.0000e-004	0.0317	8.3800e-003	1.9000e-004	8.5700e-003	0.0000	26.4495	26.4495	7.2000e-004	1.2100e-003	26.8280

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	1.7300e-003	0.0709	0.0223	3.5000e-004	0.0114	7.9000e-004	0.0122	3.1300e-003	7.6000e-004	3.8900e-003	0.0000	33.7037	33.7037	1.0000e-004	5.3000e-003	35.2851
Unmitigated	1.7300e-003	0.0709	0.0223	3.5000e-004	0.0114	7.9000e-004	0.0122	3.1300e-003	7.6000e-004	3.8900e-003	0.0000	33.7037	33.7037	1.0000e-004	5.3000e-003	35.2851

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Other Non-Asphalt Surfaces	6.14	0.00	0.00	26,181	26,181
Total	6.14	0.00	0.00	26,181	26,181

4.3 Trip Type Information

Land Use	Miles					Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-C	H-W or C-W	H-O or C-NW	H-S or C-C	H-O or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	100.00	0.00	0.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	2.2873	5.0000e-005	5.6300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117
Unmitigated	2.2873	5.0000e-005	5.6300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117

6.2 Area by SubCategory

Unmitigated

SubCategory	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.5579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7289					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.2000e-004	5.0000e-005	5.6300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117
Total	2.2873	5.0000e-005	5.6300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

SubCategory	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.5579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7289					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.2000e-004	5.0000e-005	5.6300e-003	0.0000	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117
Total	2.2873	5.0000e-005	5.6300e-003	0.0000	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	0.0000	0.0110	0.0110	3.0000e-005	0.0000	0.0117

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

7.2 Water by Land Use

Unmitigated

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

Northstar #2 - Imperial County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Northstar #2

Imperial County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	614.00	Acre	614.00	26,745,840.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	3.4	Precipitation Freq (Days)	12
Climate Zone	15			Operational Year	2024

Utility Company Imperial Irrigation District

CO2 Intensity (lb/MW/hr)	189.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total days spent per phase based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Trips and VMT - Imported values based on similar solar facility projects in Imperial County

On-road Fugitive Dust - Project will be accessed directly via Highway 78.

Grading -

Vehicle Trips - Week day trip rate of 0.01 per acre assumed.

Road Dust - Project Site accessed via Highway 78

Area Coating -

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Mitigation -

Fleet Mix - all heavy duty trucks assumed to be used for operations

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehiclesSpeed	0	40
tblConstructionPhase	NumDays	10,850.00	104.00
tblConstructionPhase	NumDays	1,085.00	200.00
tblConstructionPhase	NumDays	420.00	67.00
tblFleetMix	HHD	0.02	1.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.8510e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.15	0.00
tblFleetMix	MH	3.5040e-003	0.00
tblFleetMix	MHD	8.3160e-003	0.00
tblFleetMix	OBUS	9.2500e-004	0.00
tblFleetMix	SBUS	7.6600e-004	0.00
tblFleetMix	UBUS	1.2000e-004	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	100
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	4,384.00	10.00
tblTripsAndVMT	WorkerTripNumber	11,233.00	300.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.01

2.0 Emissions Summary

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
2022	6.2644	65.7538	48.7545	0.1063	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,334.84 71	10,334.84 71	3.1562	0.0540	10,429.84 34
2023	5.6688	57.6675	47.0598	0.1062	17.2217	2.3565	19.5782	7.2457	2.1682	9.4139	0.0000	10,314.44 67	10,314.44 67	3.1548	0.1075	10,408.62 02
2024	4.0073	24.6787	37.7752	0.0674	2.4381	1.2419	3.6800	0.6492	1.1493	1.7985	0.0000	6,556.322 4	6,556.322 4	1.3258	0.1019	6,619.827 5
Maximum	6.2644	65.7538	48.7545	0.1063	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,334.84 71	10,334.84 71	3.1562	0.1075	10,429.84 34

Mitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
2022	6.2644	65.7538	48.7545	0.1063	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,334.84 71	10,334.84 71	3.1562	0.0540	10,429.84 34
2023	5.6688	57.6675	47.0598	0.1062	17.2217	2.3565	19.5782	7.2457	2.1682	9.4139	0.0000	10,314.44 67	10,314.44 67	3.1548	0.1075	10,408.62 02
2024	4.0073	24.6787	37.7752	0.0674	2.4381	1.2419	3.6800	0.6492	1.1493	1.7985	0.0000	6,556.322 4	6,556.322 4	1.3258	0.1019	6,619.827 5
Maximum	6.2644	65.7538	48.7545	0.1063	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,334.84 71	10,334.84 71	3.1562	0.1075	10,429.84 34

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	12.5359	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Mobile	0.0139	0.5050	0.1699	2.7000e-003	0.0882	6.1000e-003	0.0943	0.0242	5.8300e-003	0.0300		285.8400	285.8400	9.0000e-004	0.0449	299.2522
Total	12.5498	0.5056	0.2325	2.7000e-003	0.0882	6.3200e-003	0.0945	0.0242	6.0500e-003	0.0302		285.9744	285.9744	1.2500e-003	0.0449	299.3953

Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	12.5359	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Mobile	0.0139	0.5050	0.1699	2.7000e-003	0.0882	6.1000e-003	0.0943	0.0242	5.8300e-003	0.0300		285.8400	285.8400	9.0000e-004	0.0449	299.2522
Total	12.5498	0.5056	0.2325	2.7000e-003	0.0882	6.3200e-003	0.0945	0.0242	6.0500e-003	0.0302		285.9744	285.9744	1.2500e-003	0.0449	299.3953

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/5/2022	12/6/2022	5	67	
2	Grading	Grading	12/7/2022	9/12/2023	5	200	
3	Building Construction	Building Construction	9/13/2023	2/5/2024	5	104	

Acres of Grading (Site Preparation Phase): 67

Acres of Grading (Grading Phase): 900

Acres of Paving: 614

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	4	8.00	158	0.38
Grading	Graders	3	8.00	187	0.41
Grading	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Pavers	1	7.00	130	0.42
Building Construction	Paving Equipment	2	7.00	132	0.36
Building Construction	Plate Compactors	4	7.00	8	0.43
Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Trenchers	2	7.00	78	0.50
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	15	38.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	19	300.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					13.1047	0.0000	13.1047	6.7350	0.0000	6.7350			0.0000			0.0000
Off-Road	2.0036	20.9386	11.6399	0.0233		1.0150	1.0150	0.9338	0.9338	0.9338		2,256.548 6	2,256.548 6	0.7298		2,274.793 9
Total	2.0036	20.9386	11.6399	0.0233	13.1047	1.0150	14.1196	6.7350	0.9338	7.6687			2,256.548 6	0.7298		2,274.793 9

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0322	0.5964	0.2355	3.0900e-003	0.1104	9.0600e-003	0.1195	0.0318	8.6700e-003	0.0404		325.1324	325.1324	1.5600e-003	0.0451	338.6198
Worker	0.0542	0.0263	0.3858	7.5000e-004	0.0776	4.1000e-004	0.0780	0.0206	3.8000e-004	0.0210		75.3164	75.3164	2.5800e-003	2.3300e-003	76.0768
Total	0.0864	0.6227	0.6212	3.8400e-003	0.1880	9.4700e-003	0.1975	0.0524	9.0500e-003	0.0614		400.4488	400.4488	4.1600e-003	0.0475	414.6966

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**3.2 Site Preparation - 2022
Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					13.1047	0.0000	13.1047	6.7350	0.0000	6.7350			0.0000			0.0000
Off-Road	2.0036	20.9386	11.6399	0.0233	1.0150	1.0150	1.0150	0.9338	0.9338	0.9338	0.0000	2,256.548 6	2,256.548 6	0.7298		2,274.793 9
Total	2.0036	20.9386	11.6399	0.0233	13.1047	1.0150	14.1196	6.7350	0.9338	7.6687	0.0000	2,256.548 6	2,256.548 6	0.7298		2,274.793 9

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0322	0.5964	0.2355	3.0900e-003	0.1104	9.0600e-003	0.1195	0.0318	8.6700e-003	0.0404		325.1324	325.1324	1.5800e-003	0.0451	338.6198
Worker	0.0542	0.0263	0.3858	7.5000e-004	0.0776	4.1000e-004	0.0780	0.0206	3.8000e-004	0.0210		75.3164	75.3164	2.5800e-003	2.3300e-003	76.0768
Total	0.0864	0.6227	0.6212	3.8400e-003	0.1880	9.4700e-003	0.1975	0.0524	9.0500e-003	0.0614		400.4488	400.4488	4.1600e-003	0.0475	414.6966

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	6.0262	65.0575	47.0532	0.1004	2.7387	2.7387	2.7387	2.5196	2.5196	2.5196		9.723.512 ₂	9.723.512 ₂	3.1448		9,802.131 ₇
Total	6.0262	65.0575	47.0532	0.1004	16.8164	2.7387	19.5552	7.1358	2.5196	9.6554		9,723.512₂	9,723.512₂	3.1448		9,802.131₇

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0322	0.5964	0.2365	3.0900e-003	0.1104	9.0600e-003	0.1195	0.0318	8.6700e-003	0.0404		325.1324	325.1324	1.5800e-003	0.0451	338.6198
Worker	0.2061	0.0999	1.4659	2.8300e-003	0.2948	1.5700e-003	0.2964	0.0782	1.4500e-003	0.0797		286.2025	286.2025	9.8100e-003	8.8700e-003	289.0918
Total	0.2382	0.6963	1.7013	5.9200e-003	0.4052	0.0106	0.4159	0.1100	0.0101	0.1201		611.3349	611.3349	0.0114	0.0540	627.7117

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	6.0262	65.0575	47.0532	0.1004	2.7387	2.7387	2.7387	2.5196	2.5196	2.5196	0.0000	9,723.512 ₂	9,723.512 ₂	3.1448		9,802.131 ₇
Total	6.0262	65.0575	47.0532	0.1004	16.8164	2.7387	19.5552	7.1358	2.5196	9.6554	0.0000	9,723.512₂	9,723.512₂	3.1448		9,802.131₇

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor	0.0322	0.5964	0.2355	3.0900e-003	0.1104	9.0600e-003	0.1195	0.0318	8.6700e-003	0.0404			325.1324	1.5800e-003	0.0451	338.6198
Worker	0.2061	0.0999	1.4659	2.8300e-003	0.2948	1.5700e-003	0.2964	0.0782	1.4500e-003	0.0797			286.2025	9.8100e-003	8.8700e-003	289.0918
Total	0.2382	0.6963	1.7013	5.9200e-003	0.4052	0.0106	0.4159	0.1100	0.0101	0.1201			611.3349	0.0114	0.0540	627.7117

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	5.4534	57.1174	45.5209	0.1004	2.3502	2.3502	2.3502	2.1621	2.1621	2.1621		9,723.5530	9,723.5530	3.1448		9,802.1729
Total	5.4534	57.1174	45.5209	0.1004	16.8164	2.3502	19.1666	7.1358	2.1621	9.2979		9,723.5530	9,723.5530	3.1448		9,802.1729

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor	0.0252	0.4620	0.2101	2.9900e-003	0.1104	4.9100e-003	0.1153	0.0318	4.7000e-003	0.0365		314.0247	314.0247	1.2500e-003	0.0432	326.9309
Worker	0.1903	0.0881	1.3288	2.7400e-003	0.2948	1.4600e-003	0.2963	0.0782	1.3500e-003	0.0796		276.8690	276.8690	8.7600e-003	8.1500e-003	279.5164
Total	0.2155	0.5500	1.5388	5.7300e-003	0.4052	6.3700e-003	0.4116	0.1100	6.0500e-003	0.1160		590.8937	590.8937	0.0100	0.0514	606.4473

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	5.4534	57.1174	45.5209	0.1004		2.3502	2.3502	2.1621	2.1621	2.1621	0.0000	9,723.5530	9,723.5530	3.1448		9,802.1729
Total	5.4534	57.1174	45.5209	0.1004	16.8164	2.3502	19.1666	7.1358	2.1621	9.2979	0.0000	9,723.5530	9,723.5530	3.1448		9,802.1729

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0252	0.4620	0.2101	2.9900e-003	0.1104	4.9100e-003	0.1153	0.0318	4.7000e-003	0.0365		314.0247	314.0247	1.2500e-003	0.0432	326.9309
Worker	0.1903	0.0881	1.3288	2.7400e-003	0.2948	1.4600e-003	0.2963	0.0782	1.3500e-003	0.0796		276.8690	276.8690	8.7600e-003	8.1500e-003	279.5164
Total	0.2155	0.5500	1.5388	5.7300e-003	0.4052	6.3700e-003	0.4116	0.1100	6.0500e-003	0.1160		590.8937	590.8937	0.0100	0.0514	606.4473

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

Category	lb/day																
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	2.7156	24.9629	27.9416	0.0435		1.3377	1.3377		1.2378	1.2378		4,125.9958	4,125.9958	1.2635			4,157.5823
Total	2.7156	24.9629	27.9416	0.0435		1.3377	1.3377		1.2378	1.2378		4,125.9958	4,125.9958	1.2635			4,157.5823

Unmitigated Construction Off-Site

Category	lb/day																
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0252	0.4620	0.2101	2.9900e-003	0.1104	4.9100e-003	0.1153	0.0318	4.7000e-003	0.0365		314.0247	314.0247	1.2500e-003	0.0432		326.9309
Worker	1.5022	0.6952	10.4905	0.0216	2.3277	0.0115	2.3392	0.6174	0.0106	0.6281		2,185.8079	2,185.8079	0.0692	0.0643		2,206.7085
Total	1.5274	1.1572	10.7005	0.0246	2.4381	0.0165	2.4545	0.6492	0.0153	0.6645		2,499.8326	2,499.8326	0.0704	0.1075		2,533.6394

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.7156	24.9629	27.9416	0.0435	1.3377	1.3377	1.3377	1.2378	1.2378	1.2378	0.0000	4,125.9858	4,125.9858	1.2635		4,157.5823
Total	2.7156	24.9629	27.9416	0.0435	1.3377	1.3377	1.3377	1.2378	1.2378	1.2378	0.0000	4,125.9858	4,125.9858	1.2635		4,157.5823

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0252	0.4620	0.2101	2.9900e-003	0.1104	4.9100e-003	0.1153	0.0318	4.7000e-003	0.0365		314.0247	314.0247	1.2500e-003	0.0432	326.9309
Worker	1.5022	0.6952	10.4905	0.0216	2.3277	0.0115	2.3392	0.6174	0.0106	0.6281		2,185.8079	2,185.8079	0.0692	0.0643	2,206.7085
Total	1.5274	1.1572	10.7005	0.0246	2.4381	0.0165	2.4545	0.6492	0.0153	0.6645		2,499.8326	2,499.8326	0.0704	0.1075	2,533.6394

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	2.5910	23.6008	27.8999	0.0435		1.2261	1.2261		1.1345	1.1345		4,126.5309	4,126.5309	1.2622		4,158.0853
Total	2.5910	23.6008	27.8999	0.0435		1.2261	1.2261		1.1345	1.1345		4,126.5309	4,126.5309	1.2622		4,158.0853

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0242	0.4605	0.2014	2.9500e-003	0.1104	4.9000e-003	0.1153	0.0318	4.6900e-003	0.0365		309.7971	309.7971	1.2100e-003	0.0424	322.4633
Worker	1.3922	0.6174	9.6739	0.0210	2.3277	0.0109	2.3386	0.6174	0.0101	0.6275		2,119.9943	2,119.9943	0.0624	0.0595	2,139.2789
Total	1.4163	1.0779	9.8753	0.0239	2.4381	0.0158	2.4539	0.6492	0.0148	0.6640		2,429.7915	2,429.7915	0.0636	0.1019	2,461.7422

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	2.5910	23.6008	27.8999	0.0435		1.2261	1.2261		1.1345	1.1345	0.0000	4,126.5309	4,126.5309	1.2622		4,158.0853
Total	2.5910	23.6008	27.8999	0.0435		1.2261	1.2261		1.1345	1.1345	0.0000	4,126.5309	4,126.5309	1.2622		4,158.0853

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	0.4605	0.2014	2.9500e-003	0.1104	4.9000e-003	0.1153	0.0318	4.6900e-003	0.0365		309.7971	309.7971	1.2100e-003	0.0424	322.4633
Worker	1.3922	0.6174	9.6739	0.0210	2.3277	0.0109	2.3386	0.6174	0.0101	0.6275		2,119.9943	2,119.9943	0.0624	0.0595	2,139.2789
Total	1.4163	1.0779	9.8753	0.0239	2.4381	0.0158	2.4539	0.6492	0.0148	0.6640		2,429.7915	2,429.7915	0.0636	0.1019	2,461.7422

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.0139	0.5050	0.1699	2.7000e-003	0.0882	6.1000e-003	0.0943	0.0242	5.8300e-003	0.0300		285.8400	285.8400	9.0000e-004	0.0449	299.2522
Unmitigated	0.0139	0.5050	0.1699	2.7000e-003	0.0882	6.1000e-003	0.0943	0.0242	5.8300e-003	0.0300		285.8400	285.8400	9.0000e-004	0.0449	299.2522

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Other Non-Asphalt Surfaces	6.14	0.00	0.00	26,181	26,181
Total	6.14	0.00	0.00	26,181	26,181

4.3 Trip Type Information

Land Use	Miles						Trip %						Trip Purpose %					
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by		
Other Non-Asphalt Surfaces	16.40	9.50	11.90	100.00	0.00	0.00	100.00	0.00	100	0	0	100	0	0	0	0		

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Mitigated	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004		0.1432
Unmitigated	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004		0.1432

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Architectural Coating	3.0567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.4734					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.7800e-003	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432
Total	12.5359	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

SubCategory	lb/day										lb/day					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Biogenic CO2	NBIogenic CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	3.0567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.4734					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.7800e-003	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004		0.1432
Total	12.5359	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004		0.1432

7.0 Water Detail

7.1 Mitigation Measures Water

Northstar #2 - Imperial County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Northstar #2

Imperial County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	614.00	Acre	614.00	26,745,840.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	3.4	Precipitation Freq (Days)	12
Climate Zone	15			Operational Year	2024

Utility Company Imperial Irrigation District

CO2 Intensity (lb/MW/hr)	189.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total days spent per phase based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Off-road Equipment - Unit amount based on similar solar facility projects in Imperial County

Trips and VMT - Imported values based on similar solar facility projects in Imperial County

On-road Fugitive Dust - Project will be accessed directly via Highway 78.

Grading -

Vehicle Trips - Week day trip rate of 0.01 per acre assumed.

Road Dust - Project Site accessed via Highway 78

Area Coating -

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Mitigation -

Fleet Mix - all heavy duty trucks assumed to be used for operations

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstructionPhase	NumDays	10,850.00	104.00
tblConstructionPhase	NumDays	1,085.00	200.00
tblConstructionPhase	NumDays	420.00	67.00
tblFleetMix	HHD	0.02	1.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.8510e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.15	0.00
tblFleetMix	MH	3.5040e-003	0.00
tblFleetMix	MHD	8.3160e-003	0.00
tblFleetMix	OBUS	9.2500e-004	0.00
tblFleetMix	SBUS	7.6600e-004	0.00
tblFleetMix	UBUS	1.2000e-004	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	100
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	4,384.00	10.00
tblTripsAndVMT	WorkerTripNumber	11,233.00	300.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.01

2.0 Emissions Summary

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
2022	6.2112	65.8198	48.3396	0.1059	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,292.0766	10,292.0766	3.1561	0.0544	10,387.1908
2023	5.6202	57.7198	46.6873	0.1057	17.2217	2.3566	19.5782	7.2457	2.1682	9.4139	0.0000	10,273.4602	10,273.4602	3.1548	0.1093	10,367.7526
2024	3.6649	24.7536	35.0399	0.0643	2.4381	1.2419	3.6800	0.6492	1.1493	1.7985	0.0000	6,239.5776	6,239.5776	1.3265	0.1034	6,303.5532
Maximum	6.2112	65.8198	48.3396	0.1059	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,292.0766	10,292.0766	3.1561	0.1093	10,387.1908

Mitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
2022	6.2112	65.8198	48.3396	0.1059	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,292.0766	10,292.0766	3.1561	0.0544	10,387.1908
2023	5.6202	57.7198	46.6873	0.1057	17.2217	2.3566	19.5782	7.2457	2.1682	9.4139	0.0000	10,273.4602	10,273.4602	3.1548	0.1093	10,367.7526
2024	3.6649	24.7536	35.0399	0.0643	2.4381	1.2419	3.6800	0.6492	1.1493	1.7985	0.0000	6,239.5776	6,239.5776	1.3265	0.1034	6,303.5532
Maximum	6.2112	65.8198	48.3396	0.1059	17.2217	2.7494	19.9710	7.2457	2.5298	9.7755	0.0000	10,292.0766	10,292.0766	3.1561	0.1093	10,387.1908

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

lb/day																
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004	0.0450	299.9602
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0125	0.5574	0.1743	2.7000e-003	0.0882	6.1100e-003	0.0943	0.0242	5.8500e-003	0.0300	286.5174	286.5174	286.5174	8.3000e-004	0.0450	299.9602
Total	12.5484	0.5580	0.2369	2.7000e-003	0.0882	6.3300e-003	0.0945	0.0242	6.0700e-003	0.0303	286.6518	286.6518	286.6518	1.1800e-003	0.0450	300.1033

Mitigated Operational

lb/day																
Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004	0.0450	299.9602
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0125	0.5574	0.1743	2.7000e-003	0.0882	6.1100e-003	0.0943	0.0242	5.8500e-003	0.0300	286.5174	286.5174	286.5174	8.3000e-004	0.0450	299.9602
Total	12.5484	0.5580	0.2369	2.7000e-003	0.0882	6.3300e-003	0.0945	0.0242	6.0700e-003	0.0303	286.6518	286.6518	286.6518	1.1800e-003	0.0450	300.1033

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/5/2022	12/6/2022	5	67	
2	Grading	Grading	12/7/2022	9/12/2023	5	200	
3	Building Construction	Building Construction	9/13/2023	2/5/2024	5	104	

Acres of Grading (Site Preparation Phase): 67

Acres of Grading (Grading Phase): 900

Acres of Paving: 614

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	4	8.00	158	0.38
Grading	Graders	3	8.00	187	0.41
Grading	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Pavers	1	7.00	130	0.42
Building Construction	Paving Equipment	2	7.00	132	0.36
Building Construction	Plate Compactors	4	7.00	8	0.43
Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Trenchers	2	7.00	78	0.50
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	15	38.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	19	300.00	10.00	0.00	10.20	11.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					13.1047	0.0000	13.1047	6.7350	0.0000	6.7350			0.0000			0.0000
Off-Road	2.0036	20.9386	11.6399	0.0233		1.0150	1.0150	0.9338	0.9338	0.9338		2,256.5486	2,256.5486	0.7298		2,274.7939
Total	2.0036	20.9386	11.6399	0.0233	13.1047	1.0150	14.1196	6.7350	0.9338	7.6687		2,256.5486	2,256.5486	0.7298		2,274.7939

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor	0.0310	0.6576	0.2420	3.0900e-003	0.1104	9.0800e-003	0.1195	0.0318	8.6900e-003	0.0405		325.4173	325.4173	1.5400e-003	0.0453	336.9572
Worker	0.0406	0.0275	0.2748	6.3000e-004	0.0776	4.1000e-004	0.0780	0.0206	3.8000e-004	0.0210		63.9861	63.9861	2.5800e-003	2.3900e-003	64.7637
Total	0.0715	0.6852	0.5169	3.7200e-003	0.1880	9.4900e-003	0.1975	0.0524	9.0700e-003	0.0614		389.4034	389.4034	4.1200e-003	0.0477	403.7209

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					13.1047	0.0000	13.1047	6.7350	0.0000	6.7350			0.0000			0.0000
Off-Road	2.0036	20.9386	11.6399	0.0233	1.0150	1.0150	1.0150	0.9338	0.9338	0.9338	0.0000	2,256.5486	2,256.5486	0.7298		2,274.7939
Total	2.0036	20.9386	11.6399	0.0233	13.1047	1.0150	14.1196	6.7350	0.9338	7.6687	0.0000	2,256.5486	2,256.5486	0.7298		2,274.7939

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor	0.0310	0.6576	0.2420	3.0900e-003	0.1104	9.0800e-003	0.1195	0.0318	8.6900e-003	0.0405		325.4173	325.4173	1.5400e-003	0.0453	338.9572
Worker	0.0406	0.0275	0.2748	6.3000e-004	0.0776	4.1000e-004	0.0780	0.0206	3.8000e-004	0.0210		63.9861	63.9861	2.5800e-003	2.3900e-003	64.7637
Total	0.0715	0.6852	0.5169	3.7200e-003	0.1880	9.4900e-003	0.1975	0.0524	9.0700e-003	0.0614		389.4034	389.4034	4.1200e-003	0.0477	403.7209

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	6.0262	65.0575	47.0532	0.1004	2.7387	2.7387	2.7387	2.5196	2.5196	2.5196	9,723.512	9,723.512	9,723.512	3.1448		9,802.131
Total	6.0262	65.0575	47.0532	0.1004	16.8164	2.7387	19.5552	7.1358	2.5196	9.6554		9,723.512	9,723.512	3.1448		9,802.131

Unmitigated Construction Off-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0310	0.6576	0.2420	3.0900e-003	0.1104	9.0800e-003	0.1195	0.0318	8.6900e-003	0.0405		325.4173	325.4173	1.5400e-003	0.0453	338.9572
Worker	0.1541	0.1047	1.0444	2.4100e-003	0.2948	1.5700e-003	0.2964	0.0782	1.4500e-003	0.0797		243.1473	243.1473	9.8200e-003	9.0900e-003	246.1019
Total	0.1851	0.7623	1.2864	5.5000e-003	0.4052	0.0107	0.4159	0.1100	0.0101	0.1201		568.5646	568.5646	0.0114	0.0544	585.0591

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Mitigated Construction On-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	6.0262	65.0575	47.0532	0.1004	2.7387	2.7387	2.7387	2.5196	2.5196	2.5196	0.0000	9,723.512 2	9,723.512 2	3.1448		9,802.131 7
Total	6.0262	65.0575	47.0532	0.1004	16.8164	2.7387	19.5552	7.1358	2.5196	9.6554	0.0000	9,723.512 2	9,723.512 2	3.1448		9,802.131 7

Mitigated Construction Off-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0310	0.6576	0.2420	3.0900e-003	0.1104	9.0800e-003	0.1195	0.0318	8.6900e-003	0.0405		325.4173	325.4173	1.5400e-003	0.0453	338.9572
Worker	0.1541	0.1047	1.0444	2.4100e-003	0.2948	1.5700e-003	0.2964	0.0782	1.4500e-003	0.0797		243.1473	243.1473	9.8200e-003	9.0900e-003	246.1019
Total	0.1851	0.7623	1.2864	5.5000e-003	0.4052	0.0107	0.4159	0.1100	0.0101	0.1201		568.5646	568.5646	0.0114	0.0544	585.0591

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	5.4534	57.1174	45.5209	0.1004	2.3502	2.3502	2.3502	2.1621	2.1621	2.1621		9.723.5530	9,723.5530	3.1448		9,802.1729
Total	5.4534	57.1174	45.5209	0.1004	16.8164	2.3502	19.1666	7.1358	2.1621	9.2979		9,723.5530	9,723.5530	3.1448		9,802.1729

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor	0.0239	0.5103	0.2160	2.9900e-003	0.1104	4.9300e-003	0.1153	0.0318	4.7100e-003	0.0365		314.5687	314.5687	1.2100e-003	0.0434	327.5362
Worker	0.1429	0.0921	0.9504	2.3300e-003	0.2948	1.4600e-003	0.2963	0.0782	1.3500e-003	0.0796		235.3385	235.3385	8.8400e-003	8.3400e-003	238.0445
Total	0.1669	0.6024	1.1664	5.3200e-003	0.4052	6.3900e-003	0.4116	0.1100	6.0600e-003	0.1160		549.9072	549.9072	0.0101	0.0518	565.5797

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					16.8164	0.0000	16.8164	7.1358	0.0000	7.1358			0.0000			0.0000
Off-Road	5.4534	57.1174	45.5209	0.1004	2.3502	2.3502	2.3502	2.1621	2.1621	2.1621	0.0000	9,723.5530	9,723.5530	3.1448		9,802.1729
Total	5.4534	57.1174	45.5209	0.1004	16.8164	2.3502	19.1666	7.1358	2.1621	9.2979	0.0000	9,723.5530	9,723.5530	3.1448		9,802.1729

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0239	0.5103	0.2160	2.9900e-003	0.1104	4.9300e-003	0.1153	0.0318	4.7100e-003	0.0365			314.5687	1.2100e-003	0.0434	327.5362
Worker	0.1429	0.0921	0.9504	2.3300e-003	0.2948	1.4600e-003	0.2963	0.0782	1.3500e-003	0.0796			235.3385	8.8400e-003	8.3400e-003	238.0445
Total	0.1669	0.6024	1.1664	5.3200e-003	0.4052	6.3900e-003	0.4116	0.1100	6.0600e-003	0.1160			549.9072	0.0101	0.0518	565.5797

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

Category	lb/day																
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Off-Road	2.7156	24.9629	27.9416	0.0435	1.3377	1.3377	1.3377	1.2378	1.2378	1.2378	4,125.9958	4,125.9958	4,125.9958	1.2635			4,157.5823
Total	2.7156	24.9629	27.9416	0.0435	1.3377	1.3377	1.3377	1.2378	1.2378	1.2378	4,125.9958	4,125.9958	4,125.9958	1.2635			4,157.5823

Unmitigated Construction Off-Site

Category	lb/day																
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0239	0.5103	0.2160	2.9900e-003	0.1104	4.9300e-003	0.1153	0.0318	4.7100e-003	0.0365	314.5687	314.5687	314.5687	1.2100e-003	0.0434		327.5352
Worker	1.1284	0.7271	7.5031	0.0184	2.3277	0.0115	2.3392	0.6174	0.0106	0.6281	1,857.9353	1,857.9353	1,857.9353	0.0698	0.0658		1,879.2989
Total	1.1523	1.2374	7.7191	0.0214	2.4381	0.0165	2.4545	0.6492	0.0153	0.6646	2,172.5040	2,172.5040	2,172.5040	0.0710	0.1093		2,206.6341

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.7156	24.9629	27.9416	0.0435	1.3377	1.3377	1.3377	1.2378	1.2378	1.2378	0.0000	4,125.9958	4,125.9958	1.2635		4,157.5823
Total	2.7156	24.9629	27.9416	0.0435	1.3377	1.3377	1.3377	1.2378	1.2378	1.2378	0.0000	4,125.9958	4,125.9958	1.2635		4,157.5823

Mitigated Construction Off-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0239	0.5103	0.2160	2.9900e-003	0.1104	4.9300e-003	0.1153	0.0318	4.7100e-003	0.0365		314.5687	314.5687	1.2100e-003	0.0434	327.5352
Worker	1.1284	0.7271	7.5031	0.0184	2.3277	0.0115	2.3392	0.6174	0.0106	0.6281		1,857.9353	1,857.9353	0.0698	0.0658	1,879.2989
Total	1.1523	1.2374	7.7191	0.0214	2.4381	0.0165	2.4545	0.6492	0.0153	0.6646		2,172.5040	2,172.5040	0.0710	0.1093	2,206.8341

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	2.5910	23.6008	27.8999	0.0435	1.2261	1.2261	1.2261	1.1345	1.1345	1.1345	4,126.5309	4,126.5309	4,126.5309	1.2622	1.2622	4,158.0853
Total	2.5910	23.6008	27.8999	0.0435	1.2261	1.2261	1.2261	1.1345	1.1345	1.1345	4,126.5309	4,126.5309	4,126.5309	1.2622	1.2622	4,158.0853

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0229	0.5085	0.2077	2.9500e-003	0.1104	4.9100e-003	0.1153	0.0318	4.7000e-003	0.0365	310.3414	310.3414	310.3414	1.1700e-003	0.0426	323.0645
Worker	1.0509	0.6444	6.9323	0.0178	2.3277	0.0109	2.3386	0.6174	0.0101	0.6275	1,802.7052	1,802.7052	1,802.7052	0.0632	0.0608	1,822.4034
Total	1.0739	1.1528	7.1400	0.0208	2.4381	0.0158	2.4539	0.6492	0.0148	0.6640	2,113.0467	2,113.0467	2,113.0467	0.0644	0.1034	2,145.4679

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

Mitigated Construction On-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.5910	23.6008	27.8999	0.0435	1.2261	1.2261	1.2261	1.1345	1.1345	1.1345	0.0000	4,126.5309	4,126.5309	1.2622		4,158,0853
Total	2.5910	23.6008	27.8999	0.0435	1.2261	1.2261	1.2261	1.1345	1.1345	1.1345	0.0000	4,126.5309	4,126.5309	1.2622		4,158,0853

Mitigated Construction Off-Site

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0229	0.5085	0.2077	2.9500e-003	0.1104	4.9100e-003	0.1153	0.0318	4.7000e-003	0.0365		310.3414	310.3414	1.1700e-003	0.0426	323.0645
Worker	1.0509	0.6444	6.9323	0.0178	2.3277	0.0109	2.3386	0.6174	0.0101	0.6275		1,802.7052	1,802.7052	0.0632	0.0608	1,822.4034
Total	1.0739	1.1528	7.1400	0.0208	2.4381	0.0158	2.4539	0.6492	0.0148	0.6640		2,113.0467	2,113.0467	0.0644	0.1034	2,145,4679

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	lb/day															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.0125	0.5574	0.1743	2.7000e-003	0.0682	6.1100e-003	0.0943	0.0242	5.8500e-003	0.0300	286.5174	286.5174	8.3000e-004	0.0450	0.0450	299.9602
Unmitigated	0.0125	0.5574	0.1743	2.7000e-003	0.0682	6.1100e-003	0.0943	0.0242	5.8500e-003	0.0300	286.5174	286.5174	8.3000e-004	0.0450	0.0450	299.9602

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Other Non-Asphalt Surfaces	6.14	0.00	0.00	26,181	26,181
Total	6.14	0.00	0.00	26,181	26,181

4.3 Trip Type Information

Land Use	Miles					Trip %					Trip Purpose %				
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	100.00	0.00	0.00	100.00	0.00	0.00	100	0	0	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004		0.1432
Unmitigated	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.1344	0.1344	0.1344	3.5000e-004		0.1432

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Blc- CO2	NEIb- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Architectural Coating	3.0567				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Consumer Products	9.4734				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Landscaping	5.7800e-003	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432
Total	12.5359	5.7000e-004	0.0626	0.0000	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Architectural Coating	3.0567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.4734					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.7800e-003	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432
Total	12.5359	5.7000e-004	0.0626	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004		0.1344	0.1344	3.5000e-004		0.1432

7.0 Water Detail

7.1 Mitigation Measures Water

Northstar #2 - Imperial County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

CRITERIA AIR POLLUTANT DISPLACEMENT

Table A-1. Renewable Energy Generator Specifications

Megawatt Project	130
Operational Time ¹	25
Annual Hours of Generation ¹	2,190
Annual Kilowatt Hours	284,700,000
Heat Rate ²	9,313
Btu Displaced ³	2,651,411,100,000

Notes:

¹ The Project is assumed to generate electricity 25 percent of the time available (2,190 hours annually).

² Heat Rate indicate the energy generator efficiency of existing fossil-fuel based energy generators. The heat rate of a power plant measures the amount of fuel used to generate one unit of electricity. Power plants with lower heat rates are more efficient than plants with higher heat rates. The CEC's "Updated Thermal Power Plant Efficiency Measures and Operational Characteristics for Production Cost Modeling" (2019) estimates heat rates and operating ranges for thermal power plants supplying energy to California. the average heat rate of power plant types are as follows:

Table A-2. Heat Rates

Steam Boiler Fueled by Coal:	10,800
Steam Boiler Fueled by Natural Gas:	10,200
Gas Turbine:	10,100
Combined Natural Gas Boiler & Turbine:	7,640

Omitting steam boilers fueled by coal since so little of California's energy is derived from coal, the average heat rate = 9313

³ The annual kilowatt hours multiplied by the average heat rate of existing fossil fuel based energy generators equals the amount of Btu displaced from fossil fuel production, as shown in Table A-3.

Table A-3. Btu Displacement

Annual Kilowatt Hours	284,700,000
Average Heat Rate	9,313
Btu Displaced from Fossil Fuel Based Energy Production	2,651,411,100,000

Energy consumption in California is predominately derived from natural gas, followed by renewables, nuclear, unspecified nonrenewable sources, and coal, as shown in Table A-4.

Table A-4. California Energy Mix (percentages)

Natural Gas	37.06
Coal	2.74
Renewables (not including hydroelectric generators)	33.09
Nuclear	9.33
Unspecified nonrenewable sources	5.36

Source: California Energy Commission. 2021. "2020 Total System Electric Generation." <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>

For the purposes of this analysis, the percentage of California energy derived from natural gas is added to unspecified nonrenewable sources. Table A-5 identifies the displaced Btu attributable to displaced natural gas and displaced coal.

Table A-5. Btu Displacement by Fossil Fuel Type - Annually

Natural Gas & Unspecified Nonrenewable Sources	1,124,728,588,620
Coal	72,648,664,140

The heat content of coal is assumed at 24 million Btu per ton of coal burned. Table A-6 shows the tons of displaced burned coal based on this heat content.

Table A-6. Tons of Displaced Burned Coal - Annually

Displaced Coal Burn	3,027
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Table A-7. Emissions Displacement - Tons per Year⁴

Natural Gas	
Nitrogen Oxide	2.78
Carbon Monoxide	0.84
Coarse Particulate Matter	2.64
Fine Particulate Matter	1.07
Sulfur Dioxide	1.91

Coal	
Nitrogen Oxide	18.16
Carbon Monoxide	0.76
Coarse Particulate Matter	0.13
Fine Particulate Matter	0.09
Sulfur Dioxide	0.86

Table A-8. Total Combined Emissions Displacement - Tons per Year

Natural Gas & Coal	
Nitrogen Oxide	20.95
Carbon Monoxide	1.60
Coarse Particulate Matter	2.77
Fine Particulate Matter	1.16
Sulfur Dioxide	2.77

Table A-9. Total Combined Emissions Displacement over the Life of the Project (30 years) - Tons per Year

Natural Gas & Coal	
Nitrogen Oxide	628.38
Carbon Monoxide	48.01
Coarse Particulate Matter	83.11
Fine Particulate Matter	34.78
Sulfur Dioxide	83.24

⁴Source: Displaced emissions calculated by ECORP Consulting using U.S. EPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995, 2015.

GREENHOUSE GAS EMISSIONS DISPLACEMENT

Table B-1. Renewable Energy Generator Specifications

Megawatt Project	130
Operational Time ¹	25
Annual Hours of Generation ¹	2,190
Annual Kilowatt Hours	284,700,000
Heat Rate ²	9,313
Btu Displaced ³	2,651,411,100,000

Notes:

¹ The Project is assumed to generate electricity 25 percent of the time available (2,190 hours annually).

² Heat Rate indicate the energy generator efficiency of existing fossil-fuel based energy generators. The heat rate of a power plant measures the amount of fuel used to generate one unit of electricity. Power plants with lower heat rates are more efficient than plants with higher heat rates. The CEC's "Updated Thermal Power Plant Efficiency Measures and Operational Characteristics for Production Cost Modeling" (2019) estimates heat rates and operating ranges for thermal power plants supplying energy to California. the average heat rate of power plant types are as follows:

Table B-2. Heat Rates

Steam Boiler Fueled by Coal:	10,800
Steam Boiler Fueled by Natural Gas:	10,200
Gas Turbine:	10,100
Combined Natural Gas Boiler & Turbine:	7,640

Omitting steam boilers fueled by coal since so little of California's

energy is derived from coal, the average heat rate =

9313

³ The annual kilowatt hours multiplied by the average heat rate of existing fossil fuel based energy generators equals the amount of Btu displaced from fossil fuel production, as shown in Table A-3.

Table B-3. Btu Displacement

Annual Kilowatt Hours	284,700,000
Average Heat Rate	9,313
Btu Displaced from Fossil Fuel Based Energy Production	2,651,411,100,000

Energy consumption in California is predominately derived from natural gas, followed by renewables, nuclear, unspecified nonrenewable sources, and coal, as shown in Table A-4.

Table B-4. California Energy Mix (percentages)

Natural Gas	37.06
Coal	2.74
Renewables (not including hydroelectric generators)	33.09
Nuclear	9.33
Unspecified nonrenewable sources	5.36

Source: California Energy Commission. 2021. "2020 Total System Electric Generation." <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>

For the purposes of this analysis, the percentage of California energy derived from natural gas is added to unspecified nonrenewable sources. Table A-5 identifies the displaced Btu attributable to displaced natural gas and displaced coal.

Table B-5. Btu Displacement by Fossil Fuel Type - Annually

Natural Gas & Unspecified Nonrenewable Sources	1,124,728,588,620
Coal	72,648,664,140

The heat content of coal is assumed at 24 million Btu per ton of coal burned. Table A-6 shows the tons of displaced burned coal based on this heat content.

Table B-6. Tons of Displaced Burned Coal - Annually

Displaced Coal Burn	3,027
---------------------	-------

Table B-7. Emissions Displacement - Metric Tons per Year⁴

Natural Gas	
Carbon Dioxide	61,860
Methane	0.000
Nitrous Oxide	0.000
Carbon Dioxide Equivalents	61,860

Coal	
Carbon Dioxide	7313
Methane	0.048
Nitrous Oxide	0.036
Carbon Dioxide Equivalents	7326

Table B-8. Total Combined Emissions Displacement - Metric Tons per Year

Natural Gas & Coal	
Carbon Dioxide	69,173
Methane	0.048
Nitrous Oxide	0.036
Carbon Dioxide Equivalents	69,186

Table B-9. Total Combined Emissions Displacement over the Life of the Project (30 years) - Metric Tons per Year

Natural Gas & Coal	
Carbon Dioxide	2,075,201
Methane	1.453
Nitrous Oxide	1.090
Carbon Dioxide Equivalents	2,075,575

⁴Source: Displaced emissions calculated by ECORP Consulting using U.S. EPA's AP-42 Fifth Edition Compilation of Air Emissions Factors 1995, 2015.

**Noise Impact Assessment
for the
North Star 2 Project**

County of Imperial, California

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APPENDICES

Appendix A – Federal Highway Administration Roadway Construction Noise Model Outputs – Project Construction

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
ANSI	American National Standards Institute
APN	Assessor’s Parcel Number
Aqueduct	Imperial Irrigation District Aqueduct
BESS	Battery Electric Storage System
BLM	Bureau of Land Management
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
County	Imperial County
CNEL	Community Noise Equivalent Level
CUP	Conditional Use Permit
dB	Decibel
dBA	Decibel is A-weighted
FHWA	Federal Highway Administration
FICON	Federal Interagency Commission on Noise
FTA	Federal Transit Administration
HSAT	Horizontal Single Axis Tracker
Hz	Hertz
IID	Imperial Irrigation District

Term	Definition
kV	Kilovolt
L _{eq}	Measure of ambient noise
L _{dn}	a 24-hour average L _{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime
L _{max}	The maximum A-weighted noise level during the measurement period
L _{min}	The maximum and minimum A-weighted noise level during the measurement period
MWAC	Mega Watt Alternating Current
MWH	Mega Watts Per Hour
OPR	Office of Planning and Research
OSHA	Federal Occupational Safety and Health Administration
OSHPD	Office of State Health Planning and Development
PPV	Peak particle velocity
PV	Photovoltaic
Project	North Star 2 Project
RE Overlay Zone	Renewable Energy and Transmission Overlay Zone
RMS	Root mean square
S-2	Open Space/Preservation
SR	State Route
STC	Sound Transmission Class
VdB	Vibration Velocity Level
WEAL	Western Electro-Acoustic Laboratory, Inc.

1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the North Star 2 Project (Project), which includes the construction of a 130-megawatt (MW) alternating current solar field and a 175 MW battery electric storage system (BESS) on approximately 614 acres of vacant land on two parcels in Imperial County, California (APN 039-140-013, 460 acres, and APN 039-140-014, 154 acres). This report was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the County of Imperial General Plan Noise Element. The purpose of this report is to estimate Project-generated noise and to determine the level of impact the Project would have on the environment.

1.1 Project Overview

The Project proposes to construct a 130-MW alternating current solar field, consisting of 289,800 tracker modules in 9,660 strings and associated collector and inverter facilities, and a 175 MW BESS, on approximately 614 acres of vacant land. The Project would connect to the grid offsite through an approximately 1.25-mile gen-tie line to the 230 kilovolt (kV) KN transmission line near the East Highland Canal. Operational water supply for the Project would be trucked in from offsite over the life of the Project. Neither parcel is within the County's Renewable Energy and Transmission (RE) Element. An amendment to the County's General Plan will be needed to include and classify the Project Site within the RE Overlay Zone. Additionally, a conditional use permit (CUP) to allow construction and operation of the solar energy generation facility with battery storage within the RE Overlay Zone will be required to implement the Project.

1.2 Project Location

The total combined Project Site, consisting of two separate parcels of 154 acres and 460 acres in size, spans approximately 614 acres on land between the East Highline Canal and Coachella Canal, abutting State Route 78 on the Site's southern boundary and approximately 13 miles east of Brawley. The Site is currently vacant, undeveloped land, and is surrounded by Open Space on all sides. The California Department of Conservation's Imperial County Important Farmland Map (2018) categorizes the parcels as "Other Land," indicating that they are not considered important farmland under any category Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance).

2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

2.1.1 Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the

resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted in Figure 1.

2.1.2 Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (FHWA 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the "line of sight" between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. 2006).

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	110	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	100	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	90	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	80	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft)</u>	70	<u>Vacuum Cleaner at 3 m (10 ft)</u>
<u>Commercial Area</u>		<u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	60	
<u>Quiet Urban Daytime</u>	50	<u>Large Business Office</u>
		<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u>	40	<u>Theater, Large Conference</u>
<u>Quiet Suburban Nighttime</u>		<u>Room (Background)</u>
	30	<u>Library</u>
<u>Quiet Rural Nighttime</u>		<u>Bedroom at Night,</u>
	20	<u>Concert Hall (Background)</u>
		<u>Broadcast/Recording Studio</u>
	10	
<u>Lowest Threshold of Human Hearing</u>	0	<u>Lowest Threshold of Human Hearing</u>

Source: California Department of Transportation (Caltrans) 2020a

Figure 1. Common Noise Levels

2022-103 North Star #2 Project



Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations). In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

2.1.3 Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn} /CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- 10 **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- 11 **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA “weighting” added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn} .
- 12 **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

Table 1 provides a list of other common acoustical descriptors.

Table 1. Common Acoustical Descriptors	
Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max} , L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01} , L_{10} , L_{50} , L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn} .
Community Noise Equivalent Level, CNEL	A 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The A-weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ± 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ± 1 to 2 dBA.

2.1.4 Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- ❑ Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- ❑ Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- ❑ A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- ❑ A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

2.1.5 Effects of Noise on People

2.1.5.1 Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

2.1.5.2 Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

2.2 Fundamentals of Environmental Groundborne Vibration

2.2.1 Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1- sec. period (FTA 2018).

Table 2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels			
Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2020b

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

3.1 Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The nearest existing noise-sensitive land use to the Project Site is a single-family residence located approximately 2.5 miles from the western Project boundary.

3.2 Existing Ambient Noise Environment

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in L_{dn} , daytime L_{eq} , and nighttime L_{eq} , based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 3. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "95% prediction interval [confidence interval] is on the order of +/- 10 dB." The majority of the Project Area would be considered ambient noise Category 6.

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
1	Noisy Commercial & Industrial Areas and Very Noisy Residential Areas	Very heavy traffic conditions, such as in busy, downtown commercial areas; at intersections for mass transportation or other vehicles, including elevated trains, heavy motor trucks, and other heavy traffic; and at street corners where many motor buses and heavy trucks accelerate.	63,840	67 dBA	66 dBA	58 dBA

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
2	Moderate Commercial & Industrial Areas and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1, but with somewhat less traffic; routes of relatively heavy or fast automobile traffic, but where heavy truck traffic is not extremely dense.	20,000	62 dBA	61 dBA	54 dBA
3	Quiet Commercial, Industrial Areas and Normal Urban & Noisy Suburban Residential Areas	Light traffic conditions where no mass-transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds; residential areas and commercial streets, and intersections, with little traffic, compose this category.	6,384	57 dBA	55 dBA	49 dBA
4	Quiet Urban & Normal Suburban Residential Areas	These areas are similar to Category 3, but for this group, the background is either distant traffic or is unidentifiable; typically, the population density is one-third the density of Category 3.	2,000	52 dBA	50 dBA	44 dBA
5	Quiet Residential Areas	These areas are isolated, far from significant sources of sound, and may be situated in shielded areas, such as a small wooded valley.	638	47 dBA	45 dBA	39 dBA
6	Very Quiet Sparse Suburban or rural Residential Areas	These areas are similar to Category 4 but are usually in sparse suburban or rural areas; and, for this group, there are few if any nearby sources of sound.	200	42 dBA	40 dBA	34 dBA

Source: The American National Standards Institute (ANSI) 2013

4.0 REGULATORY FRAMEWORK

4.1 Federal

4.1.1 Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.1.2 Federal Interagency Commission on Noise

The 2000 Federal Interagency Commission on Noise (FICON) findings provide guidance as to the significance of changes in ambient noise levels due to transportation noise sources. FICON recommendations are based on studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. FICON's measure of substantial increase for transportation noise exposure is as follows:

- ☒ If the existing ambient noise levels at existing noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project-related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
- ☒ If the existing noise levels range from 60 to 65 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater Project-related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
- ☒ If the existing noise levels already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL.

4.2 State

4.2.1 State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

4.2.2 State Office of Planning and Research Noise Element Guidelines

The State OPR *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a Land Use Compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.2.3 California Department of Transportation

In 2020, the California Department of Transportation (Caltrans) published the Transportation and Construction Vibration Manual (Caltrans 2020b). The manual provides general guidance on vibration issues associated with the construction and operation of projects concerning human perception and structural damage. Table 2 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

4.3 Local

4.3.1 Imperial County General Plan Noise Element

The County of Imperial General Plan Noise Element establishes maximum allowable average-hourly noise limits for various land use designations (refer to Table 4). These noise standards are to be applied at the property line of the noise-generating land use. In instances where the adjoining land use designations differ from that of the noise-generating land use, the more restrictive noise standard shall apply. Where the ambient noise level is equal to or exceeds the property line noise standard, the increase of the existing or proposed noise shall not exceed 3 dBA L_{eq} , which is a just-perceivable increase in noise. L_{eq} is defined as the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure.

Table 4. County of Imperial Property Line Noise Standards		
Land Use Zone	Time Period	Average-Hourly Noise Level (dBA L_{eq})
Residential	7 a.m. - 10 p.m.	50
	10 p.m. - 7 a.m.	45
Multi-residential	7 a.m. - 10 p.m.	55
	10 p.m. - 7 a.m.	50
Commercial	7 a.m. - 10 p.m.	60
	10 p.m. - 7 a.m.	55
Light Industrial/Industrial Park	Any time	70
General Industrial	Any time	75

Source: Imperial County 2015.

Notes: When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the Property Line noise standard, the increase of the existing or proposed noise shall not exceed 3 dBA L_{eq} .

4.3.1.1 Construction Noise Standards

Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq} , when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a one (1) hour period.

Construction equipment operations are required to be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays. In cases of a person constructing or modifying a residence for himself/herself, and if the work is not being performed as a business, construction equipment operations may be performed on Sundays and holidays between the hours of 9:00 a.m. and 5:00 p.m. Such non-commercial construction activities may be further restricted where disturbing, excessive, or offensive noise causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

4.3.1.2 Significant Increase of Ambient Noise Levels

The increase of noise levels generally results in an adverse impact to the noise environment. The Noise/Land Use Compatibility Guidelines are not intended to allow the increase of ambient noise levels up to the maximum without consideration of feasible noise reduction measures. The following guidelines are established by the County of Imperial for the evaluation of significant noise impact.

- If the future noise level after a project is completed will be within the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, but will result in an increase of 5 dB CNEL or greater, the project will have a potentially significant noise impact and mitigation measures must be considered.
- If the future noise level after a project is completed will be greater than the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, a noise increase of 3 dB CNEL or greater shall be considered a potentially significant noise impact and mitigation measures must be considered.

4.3.1.3 Noise/Land use Compatibility

The Imperial County General Plan Noise Element Noise/Land Use Compatibility Standards defines the acceptability of a land use in a specified noise environment. Table 5 provides the County of Imperial Noise/Land Use Compatibility Guidelines. When an acoustical analysis is performed, conformance of the proposed project with the Noise/Land Use Compatibility Guidelines will be used to evaluate potential noise impact and will provide criteria for environmental impact findings and conditions for project approval.

Land Use Category	Community Noise Exposure L_{dn} or CNEL, dB	Acceptability
Residential	< 60	Normally Acceptable
	60 - 70	Conditionally Acceptable
	70 - 75	Normally Unacceptable
	> 75	Clearly Unacceptable
Transient Lodging-Motels, Hotels	< 60	Normally Acceptable
	60 - 75	Conditionally Acceptable
	75 - 80	Normally Unacceptable
	> 80	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	< 60	Normally Acceptable
	60 - 70	Conditionally Acceptable
	70 - 80	Normally Unacceptable
	> 80	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	< 70	Conditionally Acceptable
	> 70	Clearly Unacceptable
Sports Arenas, Outdoor Spectator Sports	< 70	Conditionally Acceptable
	70 - 75	Normally Unacceptable
	> 75	Clearly Unacceptable
Playgrounds, Neighborhood Parks	< 70	Normally Acceptable
	70 - 75	Normally Unacceptable
	> 75	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	< 70	Normally Acceptable
	70 - 80	Normally Unacceptable
	> 80	Clearly Unacceptable
Office Buildings, Business Commercial and Professional	< 65	Normally Acceptable
	65 - 75	Conditionally Acceptable
	75 - 80	Normally Unacceptable
	> 80	Clearly Unacceptable
Industrial, Manufacturing Utilities, Agriculture	< 70	Normally Acceptable
	70 - 75	Conditionally Acceptable
	75 - 80	Normally Unacceptable
	> 80	Clearly Unacceptable

Table 5. County of Imperial Noise/Land Use Compatibility Guidelines		
Land Use Category	Community Noise Exposure L_{dn} or CNEL, dB	Acceptability

Source: Imperial County 2015.

Notes: Interpretation (For Land Use Planning Purposes):

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design

Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development clearly should not be undertaken.

5.0 IMPACT ASSESSMENT

5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would produce:

- 1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- 2) Generation of excessive groundborne vibration or groundborne noise levels.
- 3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

In order to evaluate the potential health-related effects (physical damage to the ear and mental damage from lack of sleep or focus) from construction noise, such noise generated by the Project is compared against the construction-related noise level threshold established by the County. For purposes of this analysis, Project construction noise is compared to the County's construction noise standard of 75 dBA, when averaged over an eight-hour period and measured at the nearest sensitive receptor. The increase in transportation-related noise is compared to the FICON recommendation for evaluating the impact of increased traffic noise. Noise generated onsite is compared against the County's property line standards identified in Table 4.

5.2 Methodology

This analysis of the existing and future noise environments is based on empirical observations. Predicted construction noise levels were calculated utilizing the FHWA's Roadway Construction Noise Model (2006). Groundborne vibration levels associated with construction-related activities for the Project have been

evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance.

5.3 Impact Analysis

Would the Project Result in Short-Term Construction-Generated Noise in Excess of County Standards?

Onsite Solar and Battery Storage Facilities Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The nearest existing noise-sensitive land use to the Project Site is a single-family residence located approximately 2.5 miles from the western boundary of the Project boundary. As previously described, the County's General Plan Noise Element states construction equipment operation shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. No commercial construction operations are permitted on Sundays or holidays. Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq} , when averaged over an eight-hour period, and measured at the nearest sensitive receptor. This standard, established by the County to prevent physical and mental damage consistent with exposure to excessive noise, assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a one-hour period.

The anticipated short-term construction noise levels generated for the necessary construction equipment during the onsite solar and battery storage facility component of the Proposed Project are presented in Table 6.

Table 6. Construction Average (dBA) Noise Levels at Nearest Receptor			
Equipment	Estimated Exterior Construction Noise Level at Existing Residences (dBA)	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Site Preparation			
Rubber Tired Dozers (2)	29.3 (each)	75	No
Tractors/Loaders/Backhoes (2)	31.6 (each)	75	No
Combined Site Preparation Equipment:	36.6	75	No
Grading			
Excavators (4)	28.3 (each)	75	No
Graders (3)	32.6 (each)	75	No
Rubber Tired Dozers (2)	29.3 (each)	75	No
Scrapers (2)	31.2 (each)	75	No
Tractors/Loaders/Backhoes (4)	31.6 (each)	75	No
Combined Grading Equipment:	42.6	75	No
Facility Construction			
Crane	24.2	75	No
Paver	25.8	75	No
Paving Equipment (2)	34.1 (each)	75	No
Plate Compactors (4)	27.8 (each)	75	No
Forklifts (4)	31.0 (each)	75	No
Tractors/Loaders/Backhoes (4)	31.6 (each)	75	No
Trenchers (2)	28.9 (each)	75	No
Welder	21.6	75	No
Combined Facility Construction Equipment:	43.2	75	No

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Appendix A for Model Data Outputs.

Notes: Construction equipment used during construction derived from the California Emission Estimator Model (CalEEMod) 2020.4.0. CalEEMod contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. The nearest residence is located approximately 13,200 feet from the Project boundary.

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 6, no individual or cumulative pieces of construction equipment would exceed the 75 dBA County construction noise standard during any phase of construction at the nearby noise-sensitive receptors. It is acknowledged that a limited amount of construction activities associated with the gen-tie line would occur nearer to the sensitive residential receptor (1.6 miles at the nearest). In addition to the fact that less construction equipment would be employed at the gen-tie locations, this distance is still great enough to limit all construction noise as experienced at the vicinity residential receptor to near imperceptible levels.

Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of County Standards During Operations?

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest existing noise-sensitive land use to the Project Site is a single-family residence located approximately 2.5 miles (13,200 feet) from the western boundary of the Project Site.

5.3.1.1 Operational Offsite Traffic Noise

Project operations would result in minimal additional traffic on adjacent roadways. The only visitors to the site would be that of water deliveries, repair or maintenance workers, whose presence at the site would be required infrequently and inconsistently. According to the California Department of Transportation (Caltrans) *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Proposed Project would not result in a doubling of traffic on vicinity roadways, and therefore its contribution to existing traffic noise would not be perceptible.

5.3.1.2 Operational Onsite Noise

As previously stated, noise sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest existing noise-sensitive land use to the Project Site is a single-family residence located approximately 2.5 miles (13,200 feet) from the western boundary of the Project Site.

The main stationary operational noise associated with the Project would be from the proposed transformers, inverters, substation, and transmission lines. Previous measurements were taken by ECORP staff during a weekday in the middle of a solar facility with identified noise levels reaching 47.1 dBA at approximately 50 feet distant. These measurements were taken with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT

sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator.

As previously stated, the nearest noise sensitive receptor to the Project Site is a single family residence located approximately 2.5 miles (13,200 feet) west of the Project Site. Noise attenuates a rate of approximately six dB for each doubling of distance from a stationary or point source (FHWA 2011). Considering the solar facility noise measurement of 47.1 dBA at approximately 50 feet distant, the nearest noise sensitive receptor from the Proposed Project (over two miles away) would experience operational stationary noise levels well below existing ambient noise levels currently experienced. Thus, the Proposed Project would not result in noise levels in excess of County noise standards.

Location	Operational Noise Attributed to Project (L_{eq} dBA)	County Daytime Standard (L_{eq} dB)	County Nighttime Standard (L_{eq} dB)	Exceed Standard?
Residence located west of Project Site, 13,200 feet from the western boundary	<20.0	50.0	45.0	No

Note: Reference noise measurement used to calculate Project onsite noise propagation identified at 47.1 dBA, per 30-minute measurements taken at a solar generation facility in Imperial County.

As shown in Table 7, Project operational noise would not exceed County daytime or nighttime standards.

Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Construction on the Project Site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with typical construction equipment at 25 feet distant are summarized in Table 8.

Equipment Type	Peak Particle Velocity at 25 Feet (inches per second)
Large Bulldozer	0.089
Pile Driver	0.170
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: Caltrans 2020b; FTA 2018

The County of Imperial does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020b) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings. Consistent with FTA recommendations for calculating construction vibration, construction vibration was measured from the center of the Project Site (FTA 2018). The nearest structure of concern to the construction site, with regard to groundborne vibrations, is the Orita Drain located approximately one mile (5,457 feet) west of the Project Site.

Based on the representative vibration levels presented for various construction equipment types in Table 8 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential project construction vibration levels. The FTA provides the following equation:

$$[PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}]$$

Table 9 presents the expected Project related vibration levels at a distance of 5,457 feet.

Receiver PPV Levels (in/sec)¹					Peak Vibration	Threshold	Exceed Threshold
Large Bulldozer, Caisson Drilling, & Hoe Ram	Loaded Trucks	Jackhammer	Pile Driver	Vibratory Roller			
0.000	0.000	0.000	0.000	0.000	0.000	0.2	No

Notes: ¹Based on the Vibration Source Levels of Construction Equipment included on Table 8 (FTA 2018). Distance to the nearest structure of concern is approximately 350 feet measured from Project Site boundary.

As shown in Table 9, vibration as a result of construction activities would not exceed 0.2 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold.

Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

Project operations would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the project would not result groundborne vibration impacts during operations.

Would the Project Expose People Residing or Working in the Project area to Excessive Airport Noise?

The Project Site is located approximately 20 miles northeast of the Imperial County Airport in Imperial and 19 miles southeast of the Calipatria Municipal Airport in Calipatria. The Imperial County Airport Land Use Commission has established a set of land use compatibility criteria for lands surrounding the airports in Imperial County in the Imperial County Airport Land Use Compatibility Plan (1996). As identified in the Imperial County Airport Land Use Compatibility Maps, the Proposed Project Site lays outside of the noise contours of all airports. Therefore, the Project would not expose Project workers to excessive airport noise.

5.3.1.3 Cumulative Noise

Would the Project Contribute to Cumulatively Considerable Noise During Construction?

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas adjacent to the construction site. Construction noise for the Project was determined to be less than significant following compliance with County noise standards. Cumulative development in the vicinity of the Project Site could result in elevated construction noise levels at sensitive receptors in the Project vicinity. However, each project would be required to comply with the applicable noise limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction.

Would the Project Contribute to Cumulatively Considerable Noise from Offsite Traffic?

As described previously, Project operations would result in extremely minimal additional traffic on adjacent roadways. The only visitors to the site would be that of water deliveries, repair or maintenance work that would be done infrequently. Thus, any cumulative noise impacts from project-related traffic would be minimal. Therefore, the Project's contribution to cumulative noise impacts from traffic would be less than significant.

Would the Project Contribute to Cumulatively Considerable Noise from Stationary Sources?

Cumulative noise impacts would primarily be associated with the transformers, inverters, substation, and transmission lines from the solar facility. Long-term noise sources associated with development at the

Project, combined with other cumulative projects, could cause local noise-level increases. Noise levels associated with the Proposed Project and related cumulative projects together could result in higher noise levels than considered separately. However, noise increase as a result of the Project would not be perceivable and would not exceed County standards.

6.0 REFERENCES

- California Department of Conservation. 2018. Imperial County Important Farmland Map.
- California Department of Transportation (Caltrans). 2020a. IS/EA Annotated Outline.
<http://www.dot.ca.gov/ser/vol1/sec4/ch31ea/chap31ea.htm>.
- _____. 2020b. Transportation and Construction Vibration Guidance Manual.
- _____. 2018. Traffic Census Program: 2017 Traffic Volumes. <https://dot.ca.gov/programs/traffic-operations/census>
- _____. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.
- Federal Highway Administration (FHWA). 2017. *Construction Noise Handbook*.
https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook02.cfm.
- _____. 2011. Effective Noise Control During Nighttime Construction. Available online at:
http://ops.fhwa.dot.gov/wz/workshops/accessible/schexnayder_paper.htm.
- _____. 2006. Roadway Construction Noise Model.
- Federal Transportation Agency (FTA). 2018. Transit Noise and Vibration Impact Assessment.
- Harris Miller, Miller & Hanson, Inc.. 2006. Transit Noise and Vibration Impact Assessment, Final Report.
- Imperial County. 2015. General Plan Noise Element.
- _____. 2008. General Plan Circulation and Scenic Highways Element.
- _____. 1996. Imperial County Airport Land Use Compatibility Plan.
- Office of Planning and Research (OPR). 2003. State of California General Plan Guidelines.
- Western Electro-Acoustic Laboratory, Inc. 2000. Sound Transmission Sound Test Laboratory Report
No. TL 96-186.

APPENDIX A

Federal Highway Administration Roadway Construction Noise Model Outputs – Project
Construction Noise

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 7/8/2022
Case Description: North Star #2

Description Affected Land Use
 Site Preparation Residential

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)
			Spec Lmax (dBA)	Actual Lmax (dBA)	
Dozer	No	40		81.7	13200
Dozer	No	40		81.7	13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200

Results		
Calculated (dBA)		
Equipment	*Lmax	Leq
Dozer	33.2	29.3
Dozer	33.2	29.3
Tractor	35.6	31.6
Tractor	35.6	31.6
Total	35.6	36.6

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/8/2022
 Case Description: North Star #2

Description Affected Land Use
 Grading Residential

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)
			Spec Lmax (dBA)	Actual Lmax (dBA)	
Excavator	No	40		80.7	13200
Excavator	No	40		80.7	13200
Excavator	No	40		80.7	13200
Excavator	No	40		80.7	13200
Grader	No	40	85		13200
Grader	No	40	85		13200
Grader	No	40	85		13200
Dozer	No	40		81.7	13200
Dozer	No	40		81.7	13200
Scraper	No	40		83.6	13200
Scraper	No	40		83.6	13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Excavator	32.3	28.3
Excavator	32.3	28.3
Excavator	32.3	28.3
Excavator	32.3	28.3
Grader	36.6	32.6
Grader	36.6	32.6
Grader	36.6	32.6
Dozer	33.2	29.3
Dozer	33.2	29.3
Scraper	35.1	31.2
Scraper	35.1	31.2
Tractor	35.6	31.6
Tractor	35.6	31.6

Tractor		35.6	31.6
Tractor		35.6	31.6
	Total	36.6	42.6

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/8/2022
 Case Description: North Star #2

Description Land Use
 Facility Construction Residential

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)
			Spec Lmax (dBA)	Actual Lmax (dBA)	
Crane	No	16		80.6	13200
Gradall	No	40		83.4	13200
Gradall	No	40		83.4	13200
Gradall	No	40		83.4	13200
Gradall	No	40		83.4	13200
Paver	No	50		77.2	13200
Pavement Scarafier	No	20		89.5	13200
Pavement Scarafier	No	20		89.5	13200
Compactor (ground)	No	20		83.2	13200
Compactor (ground)	No	20		83.2	13200
Compactor (ground)	No	20		83.2	13200
Compactor (ground)	No	20		83.2	13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Slurry Trenching Machine	No	50		80.4	13200
Slurry Trenching Machine	No	50		80.4	13200
Welder / Torch	No	40		74	13200

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Crane	32.1	24.2
Gradall	35	31
Gradall	35	31
Gradall	35	31
Gradall	35	31
Paver	28.8	25.8
Pavement Scarafier	41.1	34.1
Pavement Scarafier	41.1	34.1
Compactor (ground)	34.8	27.8

Compactor (ground)	34.8	27.8
Compactor (ground)	34.8	27.8
Compactor (ground)	34.8	27.8
Tractor	35.6	31.6
Tractor	35.6	31.6
Tractor	35.6	31.6
Tractor	35.6	31.6
Slurry Trenching Machine	31.9	28.9
Slurry Trenching Machine	31.9	28.9
Welder / Torch	25.6	21.6
Total	41.1	43.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 7/8/2022
Case Description: Northstar #2

Description Affected Land Use
 Site Preparation Residential

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)
			Spec Lmax (dBA)	Actual Lmax (dBA)	
Dozer	No	40		81.7	13200
Dozer	No	40		81.7	13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dozer	33.2	29.3
Dozer	33.2	29.3
Tractor	35.6	31.6
Tractor	35.6	31.6
Total	35.6	36.6

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/8/2022
 Case Description: Northstar #2

Description Affected Land Use
 Grading Residential

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)
			Spec Lmax (dBA)	Actual Lmax (dBA)	
Excavator	No	40		80.7	13200
Excavator	No	40		80.7	13200
Excavator	No	40		80.7	13200
Excavator	No	40		80.7	13200
Grader	No	40	85		13200
Grader	No	40	85		13200
Grader	No	40	85		13200
Dozer	No	40		81.7	13200
Dozer	No	40		81.7	13200
Scraper	No	40		83.6	13200
Scraper	No	40		83.6	13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Excavator	32.3	28.3
Excavator	32.3	28.3
Excavator	32.3	28.3
Excavator	32.3	28.3
Grader	36.6	32.6
Grader	36.6	32.6
Grader	36.6	32.6
Dozer	33.2	29.3
Dozer	33.2	29.3
Scraper	35.1	31.2
Scraper	35.1	31.2
Tractor	35.6	31.6
Tractor	35.6	31.6

Tractor		35.6	31.6
Tractor		35.6	31.6
	Total	36.6	42.6

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/8/2022
 Case Description: Northstar #2

Description Land Use
 Facility Construction Residential

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)
			Spec Lmax (dBA)	Actual Lmax (dBA)	
Crane	No	16		80.6	13200
Gradall	No	40		83.4	13200
Gradall	No	40		83.4	13200
Gradall	No	40		83.4	13200
Gradall	No	40		83.4	13200
Paver	No	50		77.2	13200
Pavement Scarafier	No	20		89.5	13200
Pavement Scarafier	No	20		89.5	13200
Compactor (ground)	No	20		83.2	13200
Compactor (ground)	No	20		83.2	13200
Compactor (ground)	No	20		83.2	13200
Compactor (ground)	No	20		83.2	13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Tractor	No	40	84		13200
Slurry Trenching Machine	No	50		80.4	13200
Slurry Trenching Machine	No	50		80.4	13200
Welder / Torch	No	40		74	13200

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Crane	32.1	24.2
Gradall	35	31
Gradall	35	31
Gradall	35	31
Gradall	35	31
Paver	28.8	25.8
Pavement Scarafier	41.1	34.1
Pavement Scarafier	41.1	34.1
Compactor (ground)	34.8	27.8

Compactor (ground)	34.8	27.8
Compactor (ground)	34.8	27.8
Compactor (ground)	34.8	27.8
Tractor	35.6	31.6
Tractor	35.6	31.6
Tractor	35.6	31.6
Tractor	35.6	31.6
Slurry Trenching Machine	31.9	28.9
Slurry Trenching Machine	31.9	28.9
Welder / Torch	25.6	21.6
Total	41.1	43.2

*Calculated Lmax is the Loudest value.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	110	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	100	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	90	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	80	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft)</u>	70	<u>Vacuum Cleaner at 3 m (10 ft)</u>
<u>Commercial Area</u>		<u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	60	
<u>Quiet Urban Daytime</u>	50	<u>Large Business Office</u>
		<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u>	40	<u>Theater, Large Conference</u>
<u>Quiet Suburban Nighttime</u>		<u>Room (Background)</u>
	30	<u>Library</u>
<u>Quiet Rural Nighttime</u>		<u>Bedroom at Night,</u>
	20	<u>Concert Hall (Background)</u>
		<u>Broadcast/Recording Studio</u>
	10	
<u>Lowest Threshold of Human Hearing</u>	0	<u>Lowest Threshold of Human Hearing</u>

Source: California Department of Transportation (Caltrans) 2020a



Figure 2-1. Common Noise Levels

Phase I ESA Report

**NorthStar 2 Solar Site
Hwy 78 and East Highline Canal
Brawley, California**

Prepared for:

Apex Energy Solutions, LLC
750 Main Street
El Centro, CA 92243



Prepared by:



GS Lyon Consultants, Inc.
780 N. 4th Street
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(760) 337-1100

October 2022



Engineering And
Information Technology

October 14, 2022

Mr. Ziad Alaywan
Apex Energy Solutions, LLC
750 Main Street
El Centro, CA 92243

**Phase I Environmental Site Assessment Report
NorthStar 2 Solar Site
Highway 78 and East Highline Canal
Brawley, California
GSL Report No. GS2220**

Dear Mr. Alaywan:

We have performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM E1527-13 of the approximately 640-acre subject property is located on the north side of the Highway 78 approximately 1.2 miles east of the East Highline Canal (APN 039-140-013 and 039-140-014) approximately 15 miles east of Brawley, California. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. **This assessment has revealed no evidence of recognized environmental conditions (REC's) in connection with the property:**

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312 and we have the specific qualifications based on education, training and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Attached is our report which describes the procedures used and results of the assessment. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (760) 337-1100. We appreciate the opportunity to provide our professional review for this subject property.

Respectfully Submitted,
GS Lyon Consultants, Inc.


Peter E. LaBrucherie, PE
Consulting Engineer





Steven K. Williams, PG, CEG
Consulting Geologist



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- Appendix A: Site Photographs
- Appendix B: Vicinity, Site, and Soils Maps
- Appendix C: Historical Aerial Photographs
- Appendix D: Historical Topographic Maps
- Appendix E: EDR Sanborn Fire Insurance Maps
- Appendix F: EDR Environmental Records Search Report
- Appendix G: Other Environmental Records Search Results
- Appendix H: EDR Street Directories
- Appendix I: User Questionnaire and EDR Environmental Lien and AUL Search
- Appendix J: Resumes of Environmental Professionals

1.0 INTRODUCTION

1.1 Purpose

GS Lyon Consultants, Inc. was retained by Apex Energy Solutions, LLC to conduct a Phase I Environmental Site Assessment (ESA) for the Property (herein referred to as the subject property in this Phase I ESA Report) as a prerequisite to property transaction (purchase, sale, refinance, etc.). The approximately 640-acre property is located on the north side of the Highway 78 approximately 1.2 miles east of the East Highline Canal (APN 039-140-013 and 039-140-014) approximately 15 miles east of Brawley, California. See Plate 1 in Appendix B for a Vicinity Map of the subject property.

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify, to the extent feasible, recognized environmental conditions (RECs) associated with past and present activities on the subject property or in the immediate subject property vicinity in general conformance to ASTM Standard E1527-13 “*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*” that may affect future uses of the subject property.

This report is intended to satisfy the Phase I ESA portion of “*all appropriate inquiry*” into the previous ownership and uses of the subject property as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at Title 42 of the United States Code (U.S.C.) §9601(35)(B) and in accordance with 40 Code of Federal Regulations (CFR) Part 312, Standards and Practices for All Appropriate Inquiries; Final Rule (AAI Rule).

1.2 Scope of Services

The scope of work for this ESA is in general accordance with the requirements of ASTM Standard E1527-13. This assessment included:

- Reconnaissance of the subject property and adjacent properties
- Review user-provided information
- Interviews with persons with significant knowledge of the subject property
- Review of a regulatory database report provided by a third-party vendor
- Review readily-available historical sources (including but not limited to: aerial photographs, fire insurance maps, property tax files, recorded land title records, and topographical maps)
- Prepare report of findings

1.3 Limitations

No Phase I ESA can completely eliminate uncertainty regarding the potential for RECs in connection with a property. Conformance of this assessment with ASTM Standard E1527-13 is intended to reduce, but not eliminate uncertainty regarding the potential for RECs in connection with the Subject Property. While GS Lyon has made reasonable effort to discover and interpret available historical and current information on the property within the time available, the possibility of undiscovered contamination remains. Our assessment of the subject property and surrounding areas was conducted in accordance with ASTM guidelines and the *generally accepted environmental engineering standard of practice* which existed in Imperial County, California at the time that the report was prepared. No warranty, express or implied, is made.

GS Lyon Consultants, Inc. derived the data in this report primarily from visual inspections, examination of public records and information in the public domain, informal interviews with individuals, and readily available information about the subject property. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration of the subject property, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in this report.

The findings, observations, and conclusions expressed by GS Lyon Consultants in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the subject property with any federal, state or local law or regulation.

This report should not be relied upon after **180 days** from the date of issuance, unless additional services are performed as defined in ASTM E1527-13 - Section 4.7.

1.4 Deviations or Data Gaps

ASTM Standard E1527-13 requires any significant data gaps, deviations, and deletions from the ASTM Standard to be identified and addressed in the Phase I ESA. A significant data gap would be one that affected the ability to identify a REC on the subject property or adjacent properties.

Through the course of this assessment, *data failures* or *data gaps* may have been encountered. These failures or gaps, if any, are discussed below. The following provides the opinion of the Environmental Professional as to the significance of the data gaps in terms of defining *recognized environmental conditions* at the subject property. Data failures may or may not be significant data gaps, and the discussion also provides information pertaining to whether the data failures resulted in significant data gaps.

1.4.1 Data Failures

Data failure is a failure to achieve the historical (property use) research objectives specified in the ASTM Standard Practice even after reviewing the eight standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap. No *data failures* were encountered during this investigation.

1.4.2 Data Gaps

A *data gap* is a lack of or inability to obtain information required by the ASTM Standard Practice, despite good faith efforts by the Environmental Professional (EP) to gather such information. This could include any component of the Practice, e.g., standard environmental records, interviews, or a complete reconnaissance. A data gap by itself is not inherently significant, but if other information and/or the EP's experience raises reasonable concerns about the gap, it may be judged to be significant.

Due to the location of the subject property, Sanborn Fire Insurance maps were not available for the subject property. Because there is no historical data or physical indications that the property has ever been developed or occupied by a business that would have produced hazardous materials, the lack of Sanborn Fire Insurance maps is not considered a significant data gap.

Aerial photographs and other historical records were not available at 5 year intervals as required under the ASTM E1527-13 standard. This resulted in a data gap for years that records were not available regarding the area of the subject property. However, based upon other historical information reviewed, the subject property has been vacant desert land that has been used sporadically for mining of sand and clay. Therefore, this data gap is not considered to be significant.

Interviews with past owners, operators and occupants were not reasonably ascertainable and thus constitute a data gap. Based on information obtained from other historical sources (as discussed in Section 3.0), this data gap is not expected to alter the findings of this assessment.

1.5 Significant Assumptions

In preparing this report, GS Lyon Consultants, Inc. has relied upon and presumed accurate certain information (or the absence thereof) about the subject property and adjacent properties by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, GS Lyon Consultants has not attempted to verify the accuracy or completeness of any such information.

1.6 User Reliance

This report has been prepared on behalf of and for the exclusive use of Apex Energy Solutions, LLC for the particular subject property identified in this report, and is subject to and issued in connection with the referenced Agreement and the provisions thereof. This report should not be relied upon by any party other than the client, its legal counsel, and financial institution without the express permission of GS Lyon Consultants, Inc. Any reliance on this report by other parties shall be at such party's sole risk. Any future consultation or provision of services to third parties related to the subject property requires written authorization from Apex Energy Solutions, LLC or their representatives. Any such services may be provided at GS Lyon Consultants sole discretion and under terms and conditions acceptable to GS Lyon Consultants, including potential additional compensation.

2.0 SITE DESCRIPTION

2.1 Site Location and Legal Description

The approximately 640-acre subject property is located on the north side of the Highway 78 approximately 1.2 miles east of the East Highline Canal (APN 039-140-013 and 039-140-014) approximately 15 miles east of Brawley, California. The subject property location is depicted on Plate 1, Vicinity Map.

2.2 Current Property Use and Description

The subject property currently consists of approximately 640 acres of vacant desert land. The subject property is square in plan view with Highway 78 at the southern boundary of the site. Scattered desert brush, weeds and sand dunes cover the subject property.

2.3 Adjoining Property Use

The subject property is surrounded by vacant desert land. Agricultural lands are located approximately one (1) mile to the west. The East Highline Canal separates the agricultural lands from the desert lands. The Coachella Canal is located approximately 4.5 miles east of the subject site with the Glamis Sand Dunes located east of the Coachella Canal.

2.4 Physical Site Characteristics

Topography: Topographic maps (USGS 7.5 minute Holtville, CA Quadrangle) indicate that the subject property elevation is approximately 50 to 75 feet above mean sea level (MSL) or Elevation 1050 to 1075 (local datum). The Imperial Irrigation District, which supplies power and raw (irrigation) water to the area, established local datum by equating mean sea level to El. 1000.00 feet.

Geologic Setting: The subject site is located in the East Mesa portion of the Salton Trough physiographic province. The Salton Trough is a 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. 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 East Mesa lies east of the Imperial Valley, which is underlain by lacustrine deposits consisting of interbedded lenticular and tabular silt, sand, and clay, and west of the Algodones Sand Dunes. The East Mesa is underlain by deep sand deposits derived from eolian deposition along the eastern margin of the Imperial Valley.

The Late Pleistocene to Holocene lake deposits of the Imperial Valley are probably less than 100 feet thick and derived from periodic flooding of the Colorado River which intermittently formed 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

The project site lies within the East Mesa desert plain which is underlain by sandy soils which are generally non-expansive.

Soil Conditions: The U. S. Soil Conservation Service compiled a map of surface soil conditions and published a soil survey report including maps in 1980. The soil survey maps indicate that surficial deposits at the subject property and surrounding area consist predominantly of sands and sandy loams of the Rositas, Superstition, Antho, and Holtville soil groups (see Appendix B). These loams are formed in sediment and alluvium of mixed origin (Colorado River overflows, fresh-water lake-bed sediments, and alluvial fan deposits) and aeolian deposits. Based on Unified Soil Classification System presented in the Soils Survey Report, the permeability of these soils is expected to be high within the upper 2 feet and low below 2 feet below ground surface.

Groundwater Conditions: The groundwater in the vicinity of the subject property is brackish and is encountered at a depth greater than 100 feet below the ground surface.

3.0 USER PROVIDED INFORMATION

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that *all appropriate inquiry* is not complete. The user was asked to provide information or knowledge of the following:

- Environmental cleanup liens that are filed or recorded against the subject property.
- Activity and land use limitations that are in place on the subject property or that have been filed or recorded in a registry.
- Specialized knowledge or experience of the person seeking to qualify for the LLPs.
- Relationship of the purchase price to the fair market value of the *property* if it were not contaminated.
- Commonly known or *reasonably ascertainable* information about the *property*.
- The degree of obviousness of the presence or likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation.
- The reason for preparation of this Phase I ESA.

A user questionnaire was provided to the user to aid in gathering information that may be pertinent to the evaluation of the subject property for environmental conditions. The completed user questionnaire is provided in Appendix I.

3.1 Title Records

GS Lyon reviewed preliminary title reports as part of this assessment and did not find past ownership or easements that would indicate environmentally hazardous uses on the parcels.

3.2 Environmental Liens or Activity and Use Limitations

An environmental lien is a charge, security, or encumbrance upon the title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon the property.

According to the User Questionnaire, Mr. Edgar Hernandez with ZGlobal is not aware of any Environmental Liens or Activity and Use Limitations associated with the subject property that have been filed or recorded under federal, tribal, state or local law (Appendix H).

3.3 Specialized Knowledge

According to the User Questionnaire, Mr. Hernandez is not aware of any specialized knowledge or experience associated with the subject property or nearby properties.

GS Lyon does not have any personal knowledge of the subject property.

3.4 Commonly Known or Reasonable Ascertainable Information

No information was provided by the Client regarding any commonly known or reasonably ascertainable information within the local community that is material to RECs in connection with the subject property.

3.5 Valuation Reduction for Environmental Issues

The client indicated that the purchase price of this property reasonably reflects the fair market value of the property with no discounts for environmental issues.

3.6 Owner, Property Manager, and Occupant Information

The current owner of the subject property is APEX Energy Solutions, LLC.

The subject property is currently undeveloped desert land. No property manager or occupant information is available.

3.7 Previous Reports and Other Provided Documentation

No previous reports or other pertinent documentation was provided to GS Lyon for review during the course of this assessment.

4.0 RECORDS REVIEW

A review of historic aerial photographs (Appendix C), historic topographic maps (Appendix D), historic Sanborn Fire Insurance maps (Appendix E), governmental regulatory databases (Appendix F), other regulatory and agency databases (Appendix G), and historic telephone and city directories (Appendix H) was performed to evaluate potentially adverse environmental conditions resulting from previous ownership and uses of the subject property. The details of the review are presented in Sections 4.1 through 4.5 of this report.

4.1 Regulatory Database Review

4.1.1 Standard Environmental Record Sources

GS Lyon Consultants contracted Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut which queries and maintains comprehensive environmental databases and historical information, including proprietary databases, aerial photography, topographic maps, Sanborn Maps, and city directories to generate a compilation of Federal, State and Tribal regulatory lists containing information regarding hazardous materials occurrences on or within the prescribed radii of ASTM E1527-13. The search of each database was conducted using the approximate minimum search distances from the subject property defined by the ASTM E1527-13 Standard. The purpose of the records review is to obtain and review *reasonably ascertainable* records that will help identify *recognized environmental conditions* or *historical recognized environmental conditions* in connection with the subject property.

EDR's Phase I ESA search package was ordered and performed on June 21, 2022. The search package included: Radius Map with Geocheck, aerial photographs, historic topographic maps, Sanborn maps, building permits, city directory, and property tax information.

The results of EDR's search were used to evaluate if the subject property and/or properties within prescribed search distances are listed as having a past or present record of actual or potential environmental impact. Inclusion of a property in a government database list does not necessarily indicate that the property has an environmental problem.

The following is a brief synopsis of sites identified in the EDR Radius Map with Geocheck report. The government record search report is included in its entirety in Appendix E.

Federal NPL List

The Environmental Protection Agency's (EPA) National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites was reviewed for risk sites within a 1 mile radius of the subject property. The NPL identifies sites for priority cleanup and long-term care of properties under the Superfund Program that are contaminated with hazardous substances.

The database search did not identify any NPL sites within 1 mile of the subject property.

Federal CERCLA List

The EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLA) listings were reviewed to determine if risks sites within ½ mile are listed for investigation. The CERCLA database identifies hazardous waste sites that are on or proposed to be included in the NPL and sites that require investigation and possible remedial action to mitigate potential negative impacts on human health or the environment.

The CERCLA database search did not identify any risk sites within 0.5 mile of the subject property.

Federal CERCLA – No Further Remedial Action Planned

The EPA's CERCLA – No Further Remedial Action Planned (NFRAP) database was reviewed to determine if risks sites within ½ mile are listed. CERCLA NFRAP site are risk sites that have been removed from and archived from the inventory of CERCLA sites. Archived status indicates that, to the best of EPA's knowledge, assessment at the subject property has been completed and the EPA has determined that no further steps will be taken to list this subject property on the NPL, unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.

This designation is for sites where no contamination was found, contamination was quickly removed without the need for the subject property to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

The CERCLA – NFRAP database search did not identify any risk sites within ½mile of the subject property.

Federal RCRA List

The Federal Resource Conservation Recovery Act (RCRA) Notifiers List was reviewed to determine if RCRA treatment, storage or disposal sites (TSD) are located within 1 mile of the subject property. The RCRA Correction Action Sites List (CORRACTS) is maintained for risk sites which are undergoing “a corrective action”. A corrective action order is issued when there has been a release of hazardous waste constituents into the environment from a RCRA facility.

The RCRA and RCRA CORRACTS database searches did not identify any RCRA TSD or RCRA CORRACTS risk sites within ½ mile of the subject property.

The RCRA regulated hazardous waste generator notifiers list was reviewed to determine if RCRA generator facilities are located on or adjoining the subject property. No RCRA generator facilities within ¼ mile of the subject property were identified in the database.

Federal ERNS List

The Federal Emergency Response Notification System (ERNS) List was reviewed to determine if reported release of oil and/or hazardous substances occurred on the subject property.

The ERNS database searches did not identify any reported releases for the subject property.

State and Tribal NPL List

The Environmental Protection Agency’s (EPA) National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites was reviewed for risk sites within a 1 mile radius of the subject property. The NPL identifies sites for priority cleanup and long-term care of properties under the Superfund Program that are contaminated with hazardous substances.

The database search did not identify any NPL sites within 1 mile of the subject property.

State and Tribal equivalent CERCLA

The Department of Toxic Substances Control’s (DTSC’s) Site Mitigation and Brownfields Reuse Program’s (SMBRP’s) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites.

EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

The EnviroStor database search did not identify any risk sites within 1 mile of the subject property.

State and Tribal Leaking Underground Storage Tank Sites

The California State Water Resources Control Board (SWRCB) maintains a list of information concerning reported leaking underground storage tanks (LUST). The LUST inventory list was reviewed to determine if any LUSTs are located within ½ mile the subject property.

The SWRCB LUST database did not identify any risk sites within ½ mile of the subject property.

State and Tribal Underground and Aboveground Storage Tank Sites

The California State Water Resource Control Board (SWRCB) underground storage tank (UST) and above ground storage tank (AST) inventory list was reviewed to determine if any UAST's are located on or adjacent to the subject property.

The SWRCB UAST database did not identify any risk sites within ½ mile of the subject property.

Solid Waste Disposal/Landfill Facilities

The Solid Waste Disposal/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data comes from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list database did not identify any risk sites within ½ mile of the subject property.

Unmapped (Orphan) Sites

Not all sites or facilities identified in the database records can be accurately located in relation to the Subject Property due to incomplete information being supplied to the regulatory agencies and are referred to as “orphan sites” by EDR.

One orphan listing was reported. The orphan site listed is Newmont Gold Company – Mesquite Mine which is located at 6502 Hwy 78, approximately 16 miles northeast of the subject property. Therefore, the listed orphan site does not pose a risk to the subject property.

Additional Government Environmental Records

Additional government environmental record databases were reviewed. No listings in the following databases were found for the subject property:

CERS Hazardous Waste: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

HWTS: Hazardous Waste Tracking System. DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

HAZNET: Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

FINDS: Facility Index System/Facility Registry System Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental

statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

HAULERS: A listing of registered waste tire haulers.

ECHO: Enforcement & Compliance History Information. ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

RCRC NonGen/NLR: RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

4.1.2 Additional Environmental Record Sources

California Department of Toxic Substances Control (DTSC) Records – Envirostor Database: EnviroStor is an online search and Geographic Information System tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. Public Access to EnviroStor is accessible via the DTSC Web Page located at: <http://www.envirostor.dtsc.ca.gov/public/>. The EnviroStor database includes the following site types: Federal Superfund sites (National Priority List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites.

The information includes site name, site type, status, address, any restricted use (recorded deed restrictions), past use(s) that caused contamination, potential contaminants of concern, potential environmental media affected, site history, planned and completed activities. The EnviroStor database also contains current and historical information relating to Permitted and Corrective Action facilities. The EnviroStor database includes current and historical information on the following permit-related documents: facility permits; permit renewal applications; permit modifications to an existing permit; closure of hazardous waste management units (HWMUs) or entire facilities; facility corrective action (investigation and/or cleanup); and/or post-closure permits or other required post-closure activities.

The EnviroStor database was queried on August 23, 2022. A map showing the results of the query is provided in Appendix F. No reported cases were found on the subject property. No risk sites were located within ½ mile of the subject property.

California State Water Resources Control Board Records – GeoTracker Database: GeoTracker is a geographic information system (GIS) maintained by the California State Water Resources Control Board (SWRCB) that provides online access to environmental data at <http://www.geotracker.swrcb.ca.gov>. GeoTracker tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Site information from the Spills, Leaks, Investigations, and Cleanups (SLIC) Program is also included in GeoTracker.

The GeoTracker database was queried for environmental data pertaining to the Subject property on August 23, 2022. A map showing the results of the query is provided in Appendix F. No reported cases were found on the subject property. No risk sites were located within ½ mile of the subject property.

California Environmental Protection Agency (CalEPA) Records Search: CalEPA Regulated Site Portal is a website that combines data about environmentally regulated sites and facilities in California into a single, searchable database and interactive map. The portal was created to provide a more holistic view of regulated activities statewide. By combining data from a variety of state and federal databases, the portal provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials. The portal combines information from the following databases: Cal/OSHA, California Environmental Reporting System (CERS), California Integrated Water Quality System (CIWQS), US EPA's Air Emission Inventory System (EIS), Envirostor, Geotracker, Stormwater Multiple Application and Report Tracking System (SMARTS), Solid Waste Information System (SWIS), and Toxics Release Inventory (TRI).

The CalEPA database was queried for environmental data pertaining to the subject property on August 23, 2022. A map showing the results of the query and the CalEPA information for identified risk sites are provided in Appendix G. No reported cases were found on the subject property. No risk sites were located within ½ mile of the subject property.

CUPA Records Search: The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. Cal/EPA and other state agencies set the standards for their programs while local governments implement the standards—these local implementing agencies are called Certified Unified Program Agencies (CUPA).

The DTSC Imperial CUPA office was contacted (on August 23, 2022). CUPA records were searched for environmental issues related to the subject property. The DTSC indicated that records are filed per address, and with no known address associated with the subject property, no records were found associated with the subject property.

4.2 Historical Use Records

ASTM E1527-13 requires the environmental professional to identify all obvious uses of the property from the present back to the property's first developed use or 1940, whichever is earliest. This information is collected to identify the likelihood that past uses have led to RECs in connection with the property. This task is accomplished by reviewing standard historical sources to the extent that they are necessary, reasonably ascertainable, and likely to be useful. These standard records include aerial photographs, fire insurance maps, property tax files, land title records, topographic maps, city directories, telephone directories, building department records, and zoning/land use records.

The general type of historical use (i.e., commercial, retail, residential, industrial, undeveloped, office) should be identified at 5-year intervals, unless the specific use of the property appears to be unchanged over a period longer than 5 years. The historical research is complete when the use is defined or when data failure occurs. Data failure occurs when all of the standard historical sources have been reviewed, yet the property use cannot be identified back to its first developed use or to 1940. Data failure is not uncommon in trying to identify the use of the property at 5-year intervals back to first use or 1940, whichever is earlier.

GS Lyon reviewed the following historical records to identify obvious uses of the subject property from the present back to the property's first developed use, or to 1940, whichever is earlier. The results of this research and data failure, if encountered, are presented in the following sections.

4.2.1 Title Records

GS Lyon reviewed preliminary title reports as part of this assessment and did not find past ownership or easements that would indicate environmentally hazardous uses on the parcels.

4.2.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps are large scale maps depicting the commercial, industrial, and residential sections of various cities across the United States. Since the primary use of the fire insurance maps was to assess the buildings that were being insured, the existence and location of fuel storage tanks, flammable or other potentially toxic substances, and the nature of businesses are often shown on these maps.

Due to the rural undeveloped nature of the subject property and vicinity for the years the Sanborn Fire Insurance Maps were available for this subject property, no maps are available for the subject property.

4.2.3 Aerial Photographs

Aerial photographs obtained from Environmental Data Resources (EDR) dating back to 1937, the Imperial Irrigation District (IID) archives dating back to 1949, and Google Earth aerial photographs dating back to 1996 were reviewed for historical development of the subject property. Reproductions of the historical aerial photographs reviewed are included in Appendix C.

The 1937, 1949, and 1953 aerial photographs show the subject site as being vacant desert lands. Surrounding properties are also vacant desert lands.

The 1976, 1985, 1996, 2002, 2006, 2009, 2012 and 2016 aerial photographs are similar to the 1953 aerial photograph. Highway 78 appears in the 1976 aerial photograph along the southern boundary of the project site.

4.2.4 Street Directories

GS Lyon Consultants contracted Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut to conduct a search of historic city directories for the subject property (Appendix H). City directories are used for locating individuals and businesses in a particular urban or suburban area. City directories are generally divided into three sections: a business index, a list of resident names and addresses, the name and type of businesses (if unclear from the name). While city directory coverage is comprehensive for major cities, it may be spotty for rural and small towns.

EDR Digital Archives: The EDR Digital Archives City Directories for the years 1995, 2005, 2010, 2014 and 2017 were reviewed. No listings were found for the subject property and adjacent properties.

Polk City Directories: The Polk City Directories for the years 1959, 1963, 1967, 1972, 1977, 1982, 1987 and 1992 were reviewed. No listings were found for the subject property and adjacent properties.

4.2.5 Historic Topographic Maps

Historic topographic maps (1907, 1940, 1945, 1947, 1957, 1979, 2012, 2015 and 2018), showed the subject property as being vacant desert land (Appendix D). State Hwy 78 is shown on the 1979 topographic map.

4.2.6 Historical Telephone Directories

Telephone Directories: Telephone directories for the Imperial County, which included the City of Westmorland businesses published in 1941, 1955, and 1965 were reviewed. No service stations, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted at or in the immediate vicinity of the subject property.

4.3 Historical Use Summary

4.3.1 Summary of the Historical Use of Property

Based on a review of the historical information, the subject property has been vacant desert land since prior to 1937.

4.3.2 Summary of the Historical Use of Adjacent Properties

Historically, the properties located immediately adjacent to the subject property have been comprised of vacant desert lands. Highway 78 was developed along the southern boundary of the subject site sometime between the mid 1950's to mid 1970's.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

A site reconnaissance was performed by Mr. Pete LaBrucherie, a consulting engineer to GS Lyon Consultants, on August 30, 2022. The site visit consisted of a driving the perimeter of the subject property and randomly crossing the subject property. The reconnaissance included visual observations of surficial conditions at the subject property and observation of adjoining properties to the extent that they were visible from public areas. Mr. LaBrucherie was unaccompanied during the site reconnaissance.

The site reconnaissance was limited to visual and/or physical observation of the exterior and interior of the subject property and its improvements, the current uses of the property and adjoining properties, and the current condition of the property. The site visit evaluated the subject property and adjoining properties for potential hazardous materials/waste and petroleum product use, storage, disposal, or accidental release, including the following: presence of tank and drum storage; mechanical or electrical equipment likely to contain liquids; evidence of soil or pavement staining or stressed vegetation; ponds, pits, lagoons, or sumps; suspicious odors; fill and depressions; or any other condition indicative of potential contamination. The site visit did not evaluate the presence of asbestos-containing materials, radon, lead-based paint, mold, indoor air quality, or structural defects, or other non-scope items.

A site reconnaissance can be limited by weather conditions, bodies of water, adjacent buildings, or other obstacles. The weather was warm and sunny and no access limitations were placed on the site visit.

5.2 General Site Setting

The subject property currently consists of approximately 640 acres of vacant desert land. The subject property is square in plan view with Highway 78 at the southern boundary of the site. Scattered desert brush, weeds and sand dunes cover the subject property.

Photographs of the subject property taken on August 30, 2022 during our site reconnaissance are included in Appendix A.

5.3 Adjacent Properties

The subject property is surrounded by vacant desert land. Agricultural lands are located approximately one (1) mile to the west. The East Highline Canal separates the agricultural lands from the desert lands. The Coachella Canal is located approximately 4.5 miles east of the subject site with the Glamis Sand Dunes located east of the Coachella Canal.

5.4 Exterior and Interior Observations

The following conditions were specifically assessed for their potential to indicate RECs and may include conditions inside or outside structures on the subject property.

5.4.1 Hazardous Substances and Petroleum Products

GS Lyon did not observe operations that use, treat, store, dispose of, or generate hazardous materials or petroleum products on the subject property.

5.4.2 Storage Tanks

Underground Storage Tanks (USTs) – No obvious visual evidence indicating the current presence of USTs (i.e. vent pipes, fill ports, etc.) was noted.

Aboveground Storage Tanks (ASTs) – No obvious visual evidence indicating the historical presence of ASTs (i.e. secondary containments, concrete saddles, etc.) was observed.

5.4.3 Odors

No obvious strong, pungent, or noxious odors were noted during the site reconnaissance.

5.4.4 Pools of Liquid

Pools of liquid were not observed during the site reconnaissance.

5.4.5 Drums and Containers

GS Lyon did not observe drums or storage containers on the subject property.

5.4.6 Unidentified Substance Containers

GS Lyon did not observe open or damaged containers containing unidentified substances at the subject property.

5.4.7 Suspect Polychlorinated Biphenyl (PCB) Containing Equipment

No potential PCB containing equipment such as electrical transformers, capacitors, and hydraulic equipment were observed during the site reconnaissance on the subject property or immediate vicinity.

5.5 Interior Observations

The subject property is currently vacant with no structures; therefore, no interior observations were made.

5.6 Exterior Observations

5.6.1 Pits, Ponds, and Lagoons

No pits, ponds, or lagoons were noted on the subject property.

5.6.2 Stained Soils or Pavement

No evidence of significantly stained soil or pavement was noted on the subject property.

5.6.3 Stressed Vegetation

No evidence of stressed vegetation attributed to potential contamination was noted on the subject property.

5.6.4 Solid Waste

No evidence of solid waste was noted on the subject property.

5.6.5 Wastewater

No waste water is generated at the subject site.

5.6.6 Wells

No evidence of wells (dry wells, drinking water, observation wells, groundwater monitoring wells, irrigation wells, injection wells or abandoned wells) was noted on the subject property.

5.6.7 Septic Systems

No septic systems are present on the subject property.

5.7 Non-Scope Issues

ASTM guidelines identify non-scope issues, which are beyond the scope of a Phase I ESA as defined by ASTM. These issues may affect environmental risk at the subject property and may warrant discussion and/or assessment. Some of these non-scope issues include; asbestos-containing building materials, radon, lead-based paint, and wetlands which are discussed below.

5.7.1 Asbestos-Containing Building Materials

The potential for asbestos containing materials (ACM) existing at the subject property is very low due to the lack of subject property structures.

5.7.2 Lead-Based Paint

The potential or lead based paint residues existing at the subject property is very low due to the lack of subject property development.

5.7.3 Radon

The subject property is located in Zone 3 as shown on the EPA Map of Radon Zones indicating a predicted average indoor radon screening level of less than 2 pCi/L; therefore, no further action is required. Radon gas is not believed to be a potential hazard at the subject property.

5.7.4 Wetlands

No wetlands are located within one (1) mile of the subject property.

5.7.5 Agricultural Use

Based on our review of environmental records, historical documents, and subject property conditions, the property has not been in agricultural use; therefore the likelihood of residues of currently available pesticides and currently banned pesticides such as DDT/DDE existing on the subject site is very low.

6.0 INTERVIEWS

GS Lyon interviewed various individuals familiar with the subject property, as identified to us, and/or government officials in order to evaluate historical uses and identify potential RECs existing on the subject property. The individuals interviewed were asked to provide responses in good faith and to the best of their knowledge. The following sections identify the individuals interviewed and summarize the information each provided; however, additional information provided by these individuals may be presented in other sections of this report.

6.1 Interview with Owner

Mr. Ramon Gonzalez, representative of the property owner, was interviewed by GS Lyon personnel on October 7, 2022. Mr. Gonzalez indicated that he had no information pertaining to any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject property; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject property; or any notices from a governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

6.2 Interview with the Site Manager

The subject property is vacant, undeveloped land; therefore, there is no site manager.

6.3 Interview with Occupants

The subject property is vacant, undeveloped land; therefore, there are no occupants.

6.4 Interview with Local Government Officials

The DTSC Imperial CUPA office was contacted on August 23, 2022. CUPA records were searched for environmental issues related to the subject property. The DTSC indicated that records are filed per address, and with no known address associated with the subject property, no records were found associated with the subject property.

7.0 EVALUATION

7.1 Summary of Findings

The approximately 640-acre subject property is located on the north side of the Highway 78 approximately 1.2 miles east of the East Highline Canal (APN 039-140-013 and 039-140-014) approximately 15 miles east of Brawley, California has been vacant desert land since prior to 1937.

7.2 Conclusions

GS Lyon has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM E1527-13 of the approximately 640-acre subject property is located on the north side of the Highway 78 approximately 1.2 miles east of the East Highline Canal (APN 039-140-013 and 039-140-014) approximately 15 miles east of Brawley, California. Any exceptions to, or deviations from, this practice are described in Section 1.4 of this Phase I ESA report. This assessment has revealed the following recognized environmental conditions (RECs) in connection with the subject property:

7.2.1 Recognized Environmental Conditions

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term REC includes hazardous substances and petroleum products even under conditions that might be in compliance with laws. The term is not intended to include "de minimis" conditions as defined in Section 7.2.3 of this report.

This Phase I ESA has revealed no evidence of REC's *recognized environmental conditions* in connection with the subject property.

7.2.2 Historical Recognized Environmental Conditions

A *historical recognized environmental condition (HREC)* refers to a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the *property* to any required controls (for example, *property* use restrictions, *activity and use limitations*, *institutional controls*, or *engineering controls*).

This Phase I ESA has revealed no evidence of *historical recognized environmental conditions* in connection with the subject property.

7.2.3 Environmental Concerns and De Minimis Conditions

A *de minimis condition* is a condition that generally does not present a threat to human health or the *environment* and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis conditions* are not *recognized environmental conditions* nor *controlled recognized environmental conditions*.

This Phase I ESA has revealed no *de minimis* conditions or environmental concerns in connection with the subject property.

7.3 Recommendations

Based on the scope of work performed for this assessment, it is our professional opinion that no RECs have been identified in connection with the subject property that would warrant further environmental study (Phase II) at this time.

8.0 REFERENCES

40 CFR 312, Standards and Practices for All Appropriate Inquiries; Final Rule, November 2005 (AAI Rule).

American Society for Testing and Materials. 2013. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Designation E 1527-13. West Conshohocken, Pennsylvania. 35 pp.

California Environmental Protection Agency (CalEPA). CalEPA Regulated Site Portal, <https://siteportal.calepa.ca.gov/nsite/map/help> accessed via the Internet, August 2022.

Department of Toxic Substances Control. EnviroStor Database Website, <http://www.envirostor.dtsc.ca.gov/public/> accessed via the Internet, August 2022.

Environmental Data Resources, Inc., *The EDR Radius Map with Geocheck*. Inquiry number 7022956, dated June 17, 2022

Environmental Data Resources, Inc., *The EDR-City Directory Abstract*. Inquiry number 7022956, dated June 17, 2022

Environmental Data Resources, Inc., *EDR Historical Topographic Map Report*. Inquiry number 7022956, dated June 17, 2022

Environmental Data Resources, Inc., *The EDR Aerial Photo Decade Package*. Inquiry number 7022956, dated June 17, 2022

Environmental Data Resources, Inc., *Sanborn Map Report*. Inquiry number 7022956, dated June 17, 2022

Environmental Data Resources, Inc., *The EDR Property Tax Map Report*. Inquiry number 7022956, dated June 17, 2022

State Water Resources Control Board. GeoTracker Database Website, <http://geotracker.swrcb.ca.gov/> accessed via the Internet, August 2022

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the Internet, August 2022

United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the Internet, August 2022

United States Geological Survey Topographic Map, 7.5 minute series

APPENDIX A



Photo 1: Looking north from the southwest corner of the subject site.



Photo 2: Looking east from the southwest corner of the subject site.



Photo 3: Looking northeast from the southwest corner of the subject site.



Photo 4: Looking northwest from the southeast corner of the subject site.



Photo 5: Looking northwest from the middle of the subject site

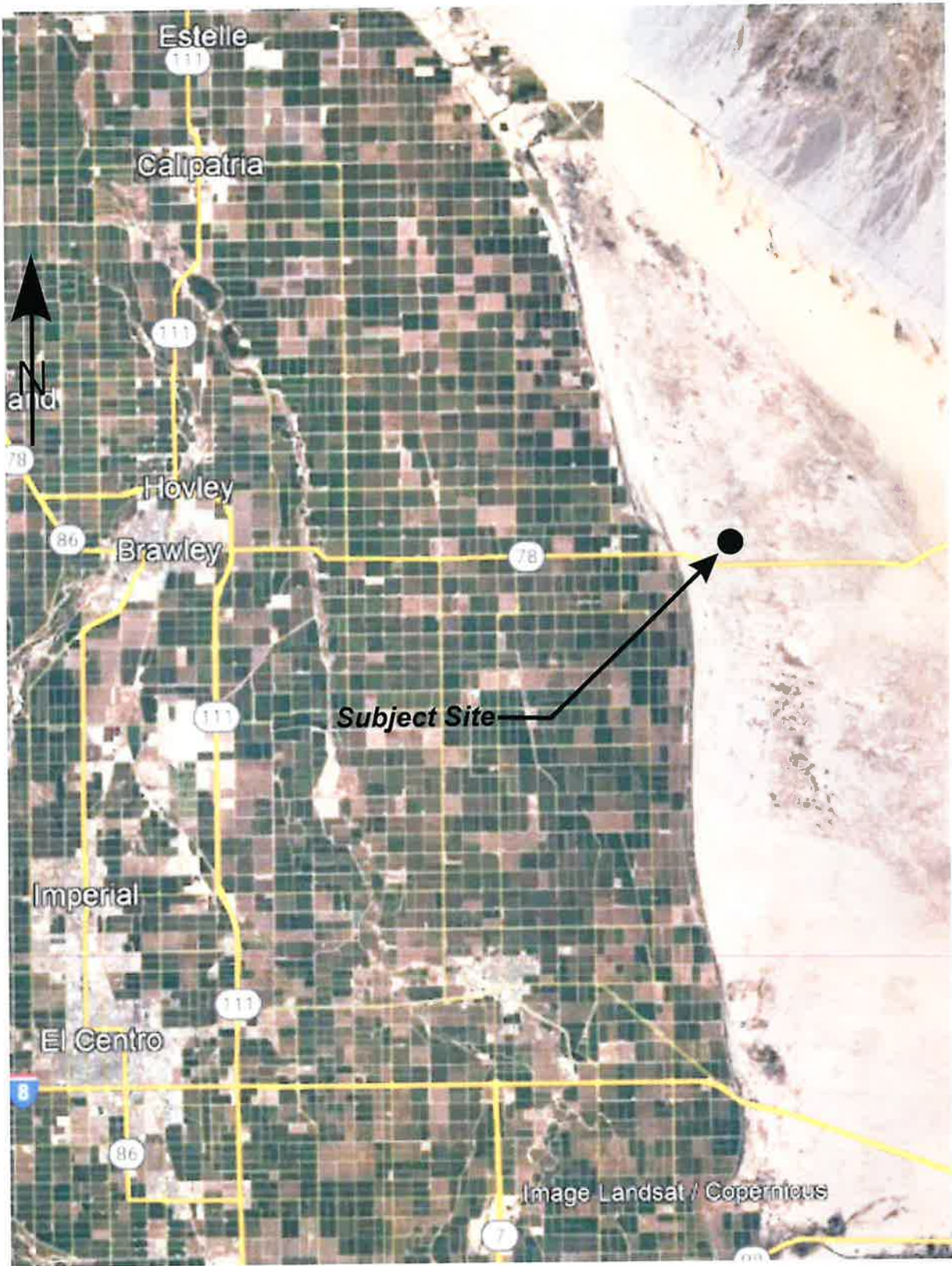


Photo 6: Looking west from the middle of the subject site



Photo 7: Looking south from the middle of the subject site

APPENDIX B

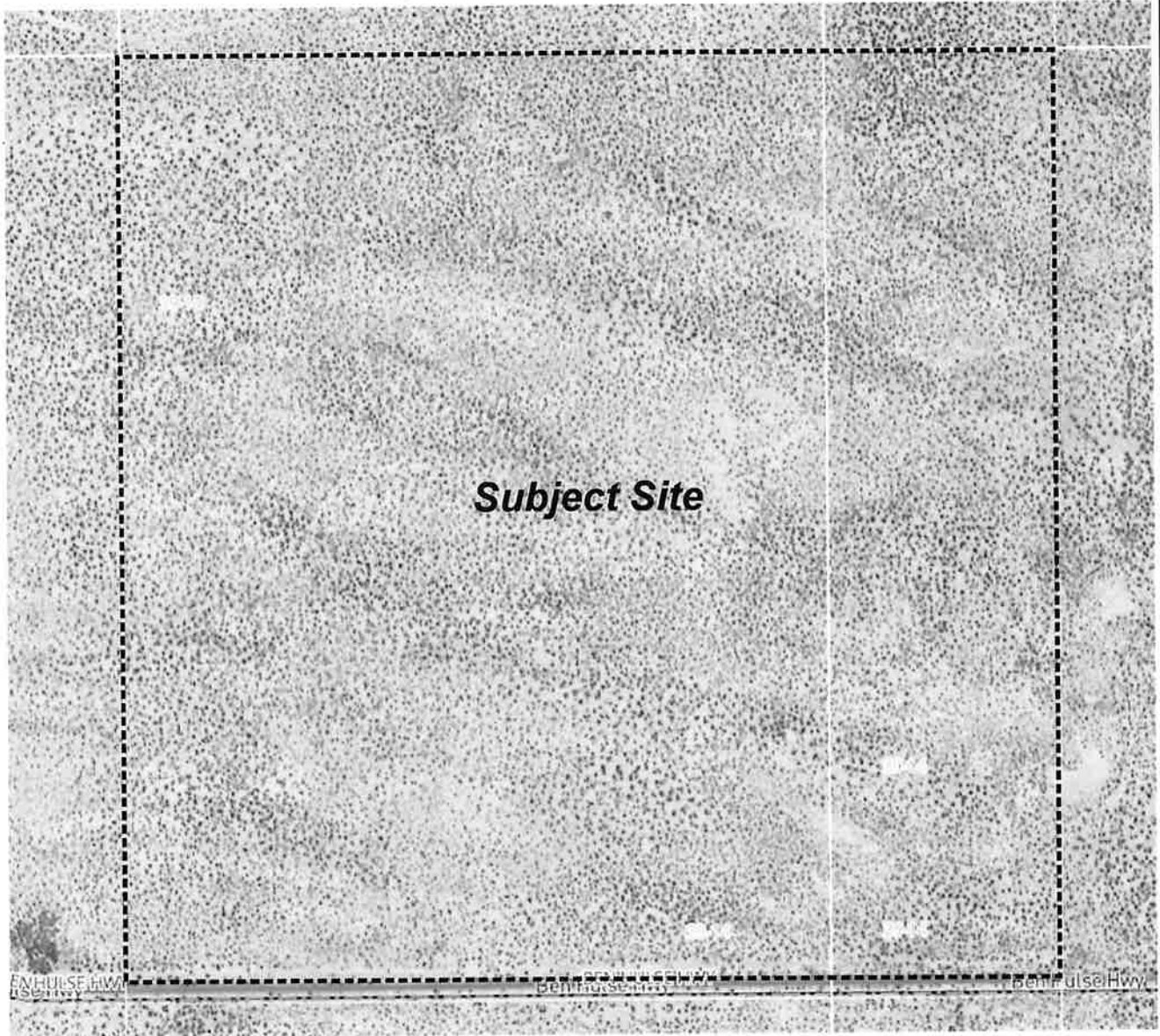


GS Lyon

Project No.: GS2220

Vicinity Map

Plate
1



Subject Site

ENHULSE HWY Beltline Security Beltline Security Beltline Security

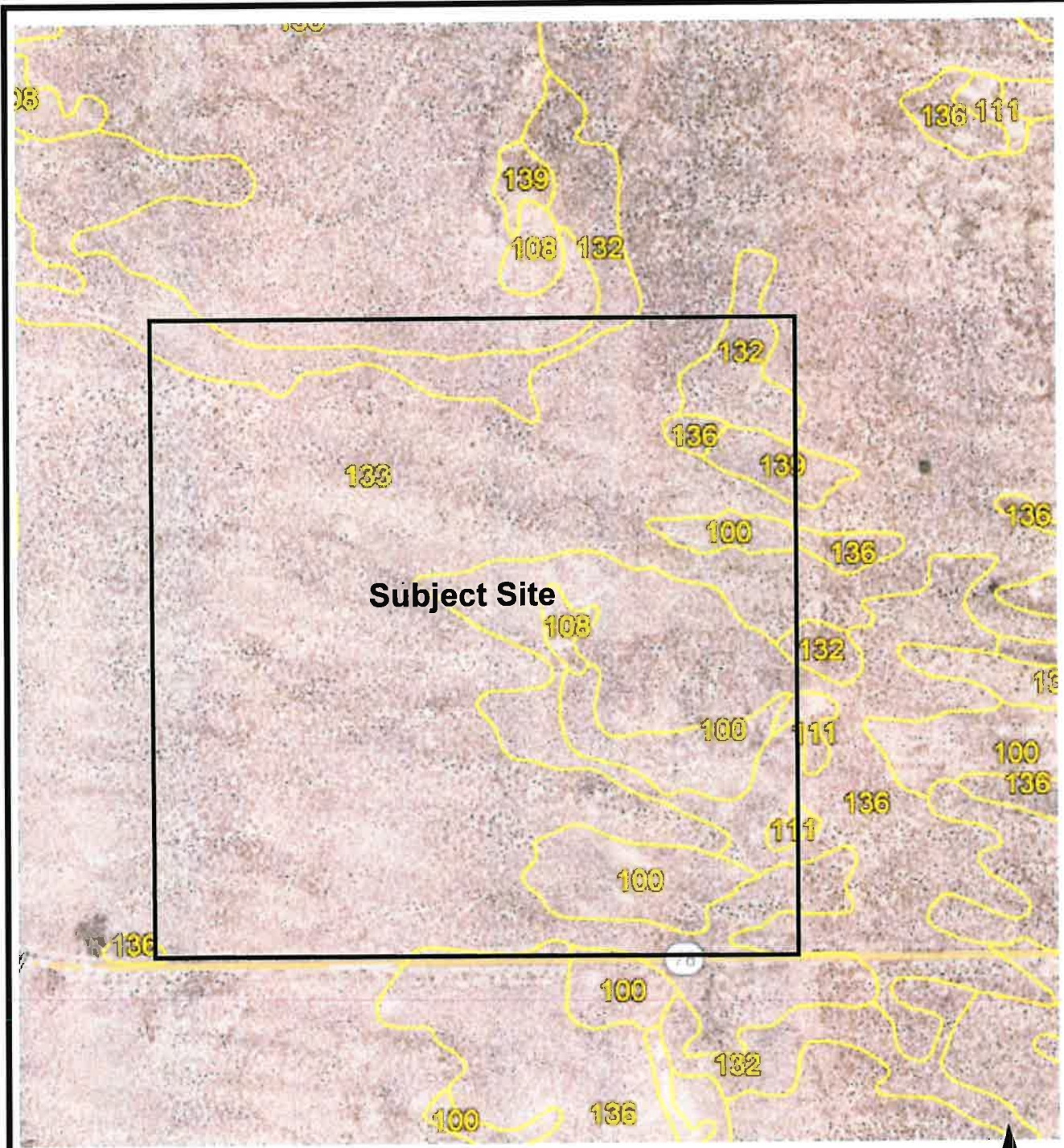


Project No.: GS2220

Site Map

Plate

2



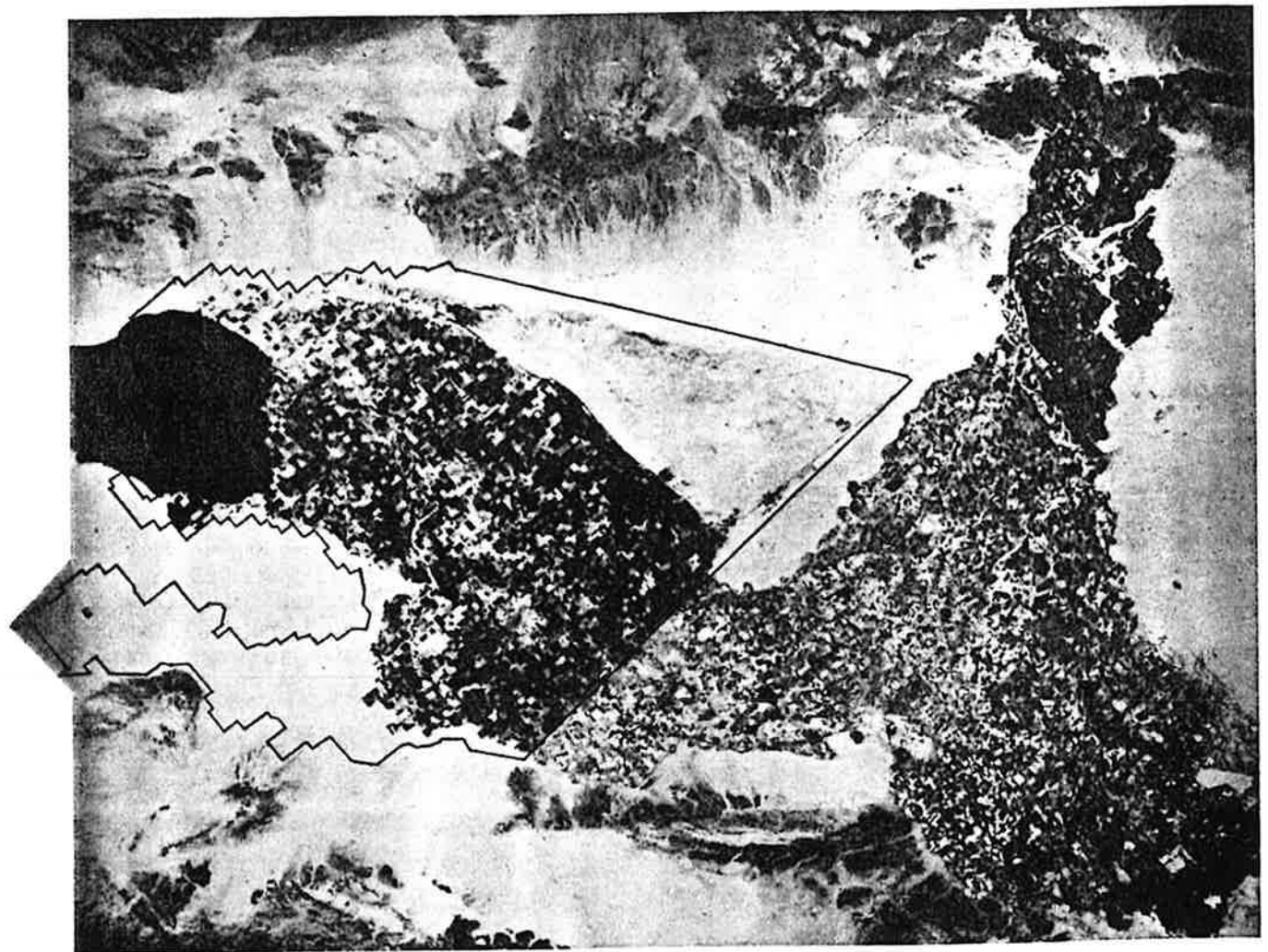
Project No.: GS2220

Soil Survey Map

Plate
3

Soil Survey of

**IMPERIAL COUNTY
CALIFORNIA
IMPERIAL VALLEY AREA**



United States Department of Agriculture Soil Conservation Service
in cooperation with
University of California Agricultural Experiment Station
and
Imperial Irrigation District

TABLE 11.--ENGINEERING INDEX PROPERTIES

[The symbol > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
100----- Antho	0-13	Loamy fine sand	SM	A-2	0	100	100	75-85	10-30	---	NP
	13-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	90-100	75-95	50-60	15-40	---	NP
101*: Antho-----	0-8	Loamy fine sand	SM	A-2	0	100	100	75-85	10-30	---	NP
	8-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	90-100	75-95	50-60	15-40	---	NP
Superstition-----	0-6	Fine sand-----	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
102*. Badland											
103----- Carsitas	0-10	Gravelly sand---	SP, SP-SM	A-1, A-2	0-5	60-90	50-85	30-55	0-10	---	NP
	10-60	Gravelly sand, gravelly coarse sand, sand.	SP, SP-SM	A-1	0-5	60-90	50-85	25-50	0-10	---	NP
104* Fluvaquents											
105----- Glenbar	0-13	Clay loam-----	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
	13-60	Clay loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
106----- Glenbar	0-13	Clay loam-----	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
107*----- Glenbar	0-13	Loam-----	ML, CL-ML, CL	A-4	0	100	100	100	70-80	20-30	NP-10
	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	95-100	75-95	35-45	15-30
108----- Holtville	0-14	Loam-----	ML	A-4	0	100	100	85-100	55-95	25-35	NP-10
	14-22	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	22-60	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
109----- Holtville	0-17	Silty clay-----	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	17-24	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-35	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
	35-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP
110----- Holtville	0-17	Silty clay-----	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
	17-24	Clay, silty clay	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-35	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	55-85	25-35	NP-10
	35-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
111*: Holtville-----	0-10	Silty clay loam	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	10-22	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	22-60	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
Imperial-----	0-12	Silty clay loam	CL	A-7	0	100	100	100	85-95	40-50	10-20
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
112-----	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
Imperial-----	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
113-----	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
Imperial-----	12-60	Silty clay, clay, silty clay loam.	CH	A-7	0	100	100	100	85-95	50-70	25-45
114-----	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
Imperial-----	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
115*: Imperial-----	0-12	Silty clay loam	CL	A-7	0	100	100	100	85-95	40-50	10-20
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
Glenbar-----	0-13	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
116*: Imperial-----	0-13	Silty clay loam	CL	A-7	0	100	100	100	85-95	40-50	10-20
	13-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
Glenbar-----	0-13	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
	13-60	Clay loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
117, 118-----	0-12	Loam-----	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
Indio-----	12-72	Stratified loamy very fine sand to silt loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
119*: Indio-----	0-12	Loam-----	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	12-72	Stratified loamy very fine sand to silt loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
Vint-----	0-10	Loamy fine sand	SM	A-2	0	95-100	95-100	70-80	25-35	---	NP
	10-60	Loamy sand, loamy fine sand.	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
120*: Laveen-----	0-12	Loam-----	ML, CL-ML	A-4	0	100	95-100	75-85	55-65	20-30	NP-10
	12-60	Loam, very fine sandy loam.	ML, CL-ML	A-4	0	95-100	85-95	70-80	55-65	15-25	NP-10

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

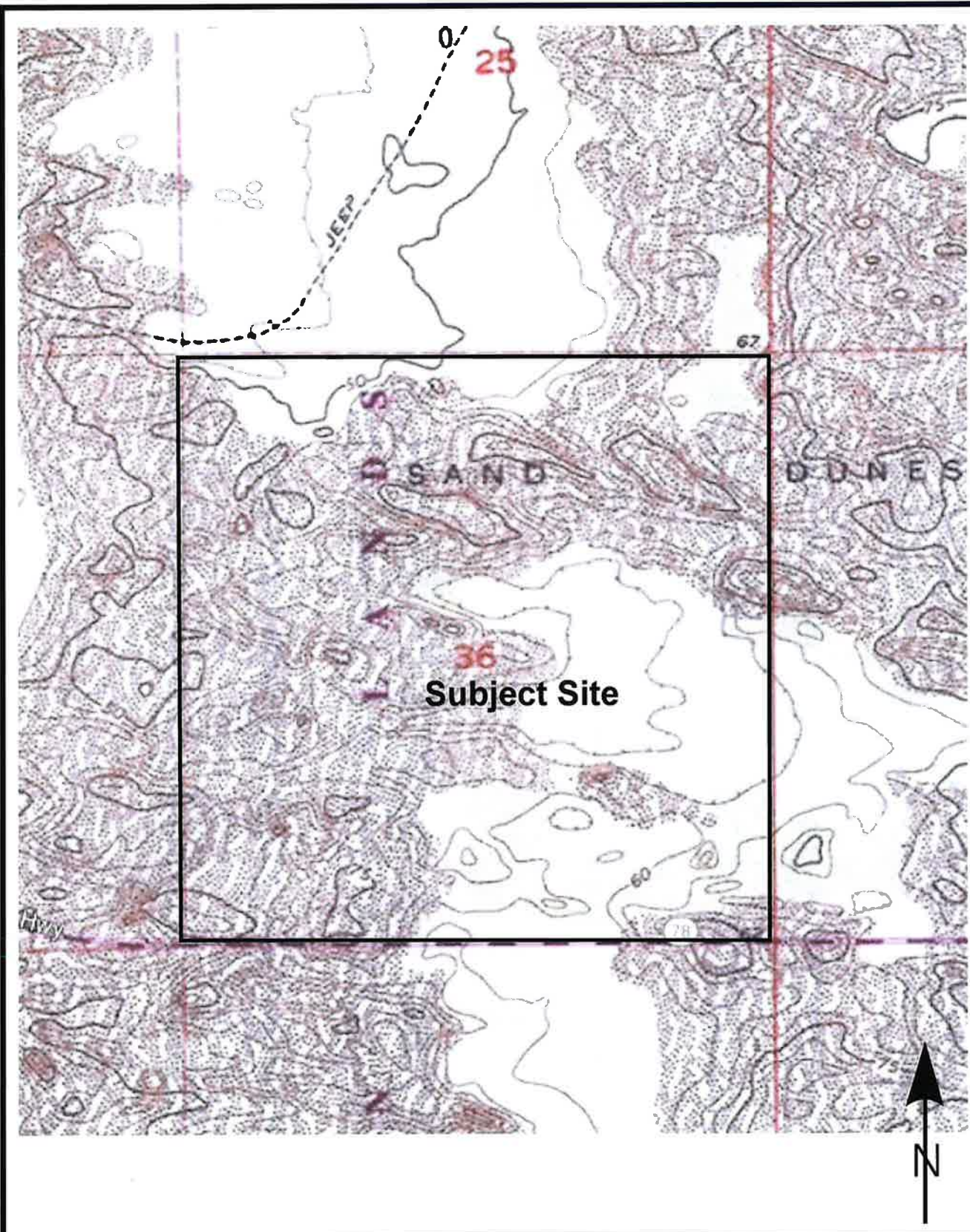
Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
121----- Meloland	0-12	Fine sand-----	SM, SP-SM	A-2, A-3	0	95-100	90-100	75-100	5-30	---	NP
	12-26	Stratified loamy fine sand to silt loam.	ML	A-4	0	100	100	90-100	50-65	25-35	NP-10
	26-71	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-40
122----- Meloland	0-12	Very fine sandy loam.	ML	A-4	0	95-100	95-100	95-100	55-85	25-35	NP-10
	12-26	Stratified loamy fine sand to silt loam.	ML	A-4	0	100	100	90-100	50-70	25-35	NP-10
	26-71	Clay, silty clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-40
123*: Meloland-----	0-12	Loam-----	ML	A-4	0	95-100	95-100	95-100	55-85	25-35	NP-10
	12-26	Stratified loamy fine sand to silt loam.	ML	A-4	0	100	100	90-100	50-70	25-35	NP-10
	26-38	Clay, silty clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-40
	38-60	Stratified silt loam to loamy fine sand.	SM, ML	A-4	0	100	100	75-100	35-55	25-35	NP-10
Holtville-----	0-12	Loam-----	ML	A-4	0	100	100	85-100	55-95	25-35	NP-10
	12-24	Clay, silty clay	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-36	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	55-85	25-35	NP-10
	36-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP
124, 125----- Niland	0-23	Gravelly sand-----	SM, SP-SM	A-2, A-3	0	90-100	70-95	50-65	5-25	---	NP
	23-60	Silty clay, clay, clay loam.	CL, CH	A-7	0	100	100	85-100	80-95	40-65	20-40
126----- Niland	0-23	Fine sand-----	SM, SP-SM	A-2, A-3	0	90-100	90-100	50-65	5-25	---	NP
	23-60	Silty clay-----	CL, CH	A-7	0	100	100	85-100	80-95	40-65	20-40
127----- Niland	0-23	Loamy fine sand	SM	A-2	0	90-100	90-100	50-65	15-30	---	NP
	23-60	Silty clay-----	CL, CH	A-7	0	100	100	85-100	80-95	40-65	20-40
128*: Niland-----	0-23	Gravelly sand-----	SM, SP-SM	A-2, A-3	0	90-100	70-95	50-65	5-25	---	NP
	23-60	Silty clay, clay, clay loam.	CL, CH	A-7	0	100	100	85-100	80-100	40-65	20-40
Imperial-----	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
129*: Pits											
130, 131----- Rositas	0-27	Sand-----	SP-SM	A-3, A-1, A-2	0	100	80-100	40-70	5-15	---	NP
	27-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
132, 133, 134, 135-Rositas	0-9	Fine sand-----	SM	A-3, A-2	0	100	80-100	50-80	10-25	---	NP
	9-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
136-----Rositas	0-4	Loamy fine sand	SM	A-1, A-2	0	100	80-100	40-85	10-35	---	NP
	4-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
137-----Rositas	0-12	Silt loam-----	ML	A-4	0	100	100	90-100	70-90	20-30	NP-5
	12-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
138*: Rositas-----	0-4	Loamy fine sand	SM	A-1, A-2	0	100	80-100	40-85	10-35	---	NP
	4-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
Superstition-----	0-6	Loamy fine sand	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
139-----Superstition	0-6	Loamy fine sand	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
140*: Torriorthents Rock outcrop											
141*: Torriorthents Orthids											
142-----Vint	0-10	Loamy very fine sand.	SM, ML	A-4	0	100	100	85-95	40-65	15-25	NP-5
	10-60	Loamy fine sand	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
143-----Vint	0-12	Fine sandy loam	ML, CL-ML, SM, SM-SC	A-4	0	100	100	75-85	45-55	15-25	NP-5
	12-60	Loamy sand, loamy fine sand.	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
144*: Vint-----	0-10	Very fine sandy loam.	SM, ML	A-4	0	100	100	85-95	40-65	15-25	NP-5
	10-40	Loamy fine sand	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
	40-60	Silty clay-----	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
Indio-----	0-12	Very fine sandy loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	12-40	Stratified loamy very fine sand to silt loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	40-72	Silty clay-----	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35

* See description of the map unit for composition and behavior characteristics of the map unit.



GS Lyon

Project No.: GS2220

Topographic Map

Plate
4

APPENDIX C



NorthStar 2 Solar

Hwy 78 and EHL Canal

Brawley, CA 92227

Inquiry Number: 7022956.11

June 21, 2022



The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

06/21/22

Site Name:

NorthStar 2 Solar
Hwy 78 and EHL Canal
Brawley, CA 92227
EDR Inquiry # 7022956.11

Client Name:

GS Lyon Consultants
780 N. Fourth Street
El Centro, CA 92243
Contact: Steven Williams



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=750'	Flight Year: 2016	USDA/NAIP
2012	1"=750'	Flight Year: 2012	USDA/NAIP
2009	1"=750'	Flight Year: 2009	USDA/NAIP
2006	1"=750'	Flight Year: 2006	USDA/NAIP
2002	1"=750'	Acquisition Date: January 01, 2002	USGS/DOQQ
1996	1"=750'	Acquisition Date: June 16, 1996	USGS/DOQQ
1985	1"=750'	Flight Date: January 01, 1985	USDA
1976	1"=750'	Flight Date: October 12, 1976	USGS
1953	1"=750'	Flight Date: April 07, 1953	USDA
1949	1"=750'	Flight Date: February 17, 1949	USDA
1937	1"=750'	Flight Date: November 22, 1937	USDA

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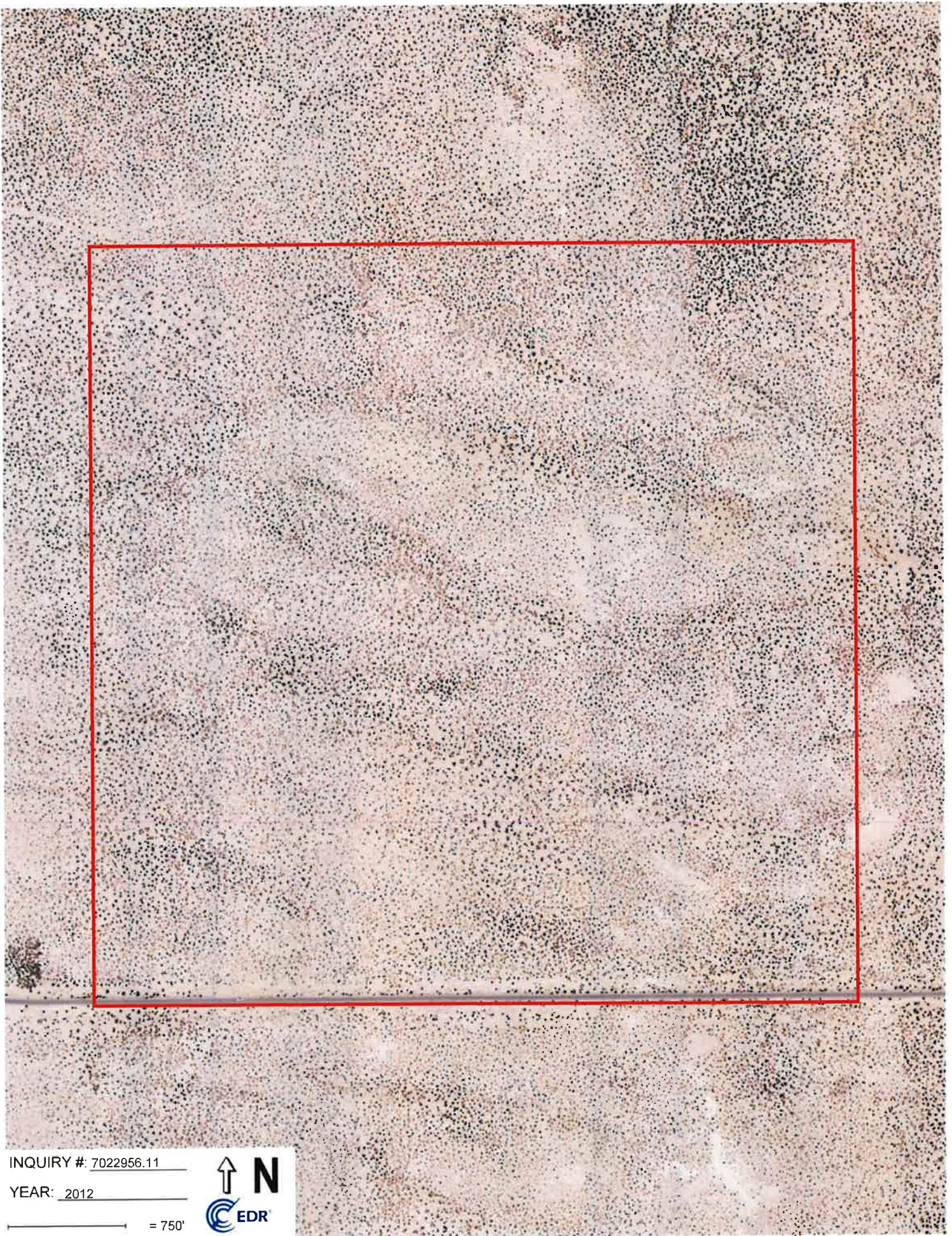


INQUIRY # 7022956.11

YEAR: 2016

_____ = 750'





INQUIRY #: 7022956.11

YEAR: 2012

← = 750'





INQUIRY # 7022956.11

YEAR: 2009

— = 750'





INQUIRY #: 7022956.11

YEAR: 2006

← = 750'



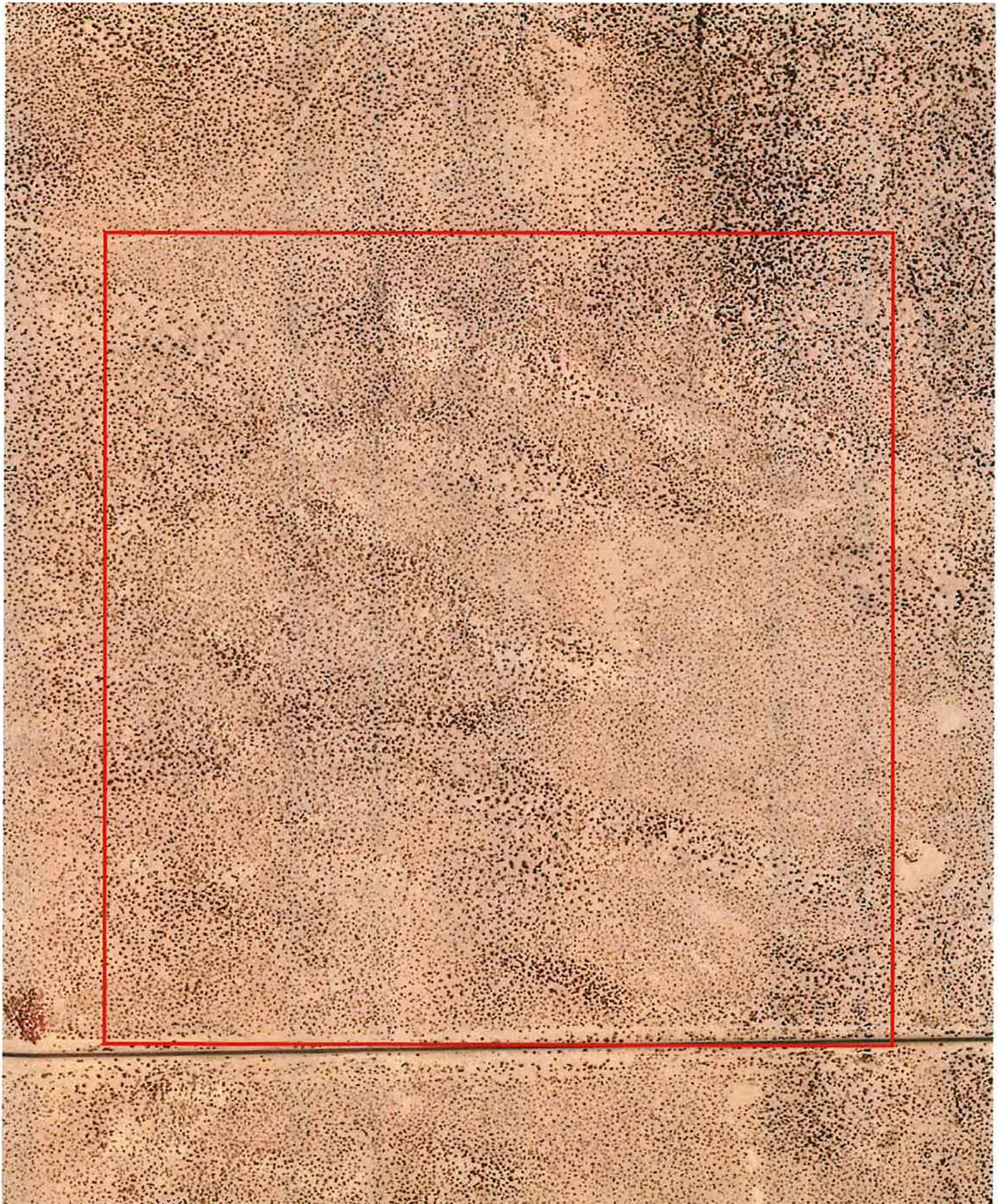


INQUIRY #: 7022956.11

YEAR: 2002

← = 750'



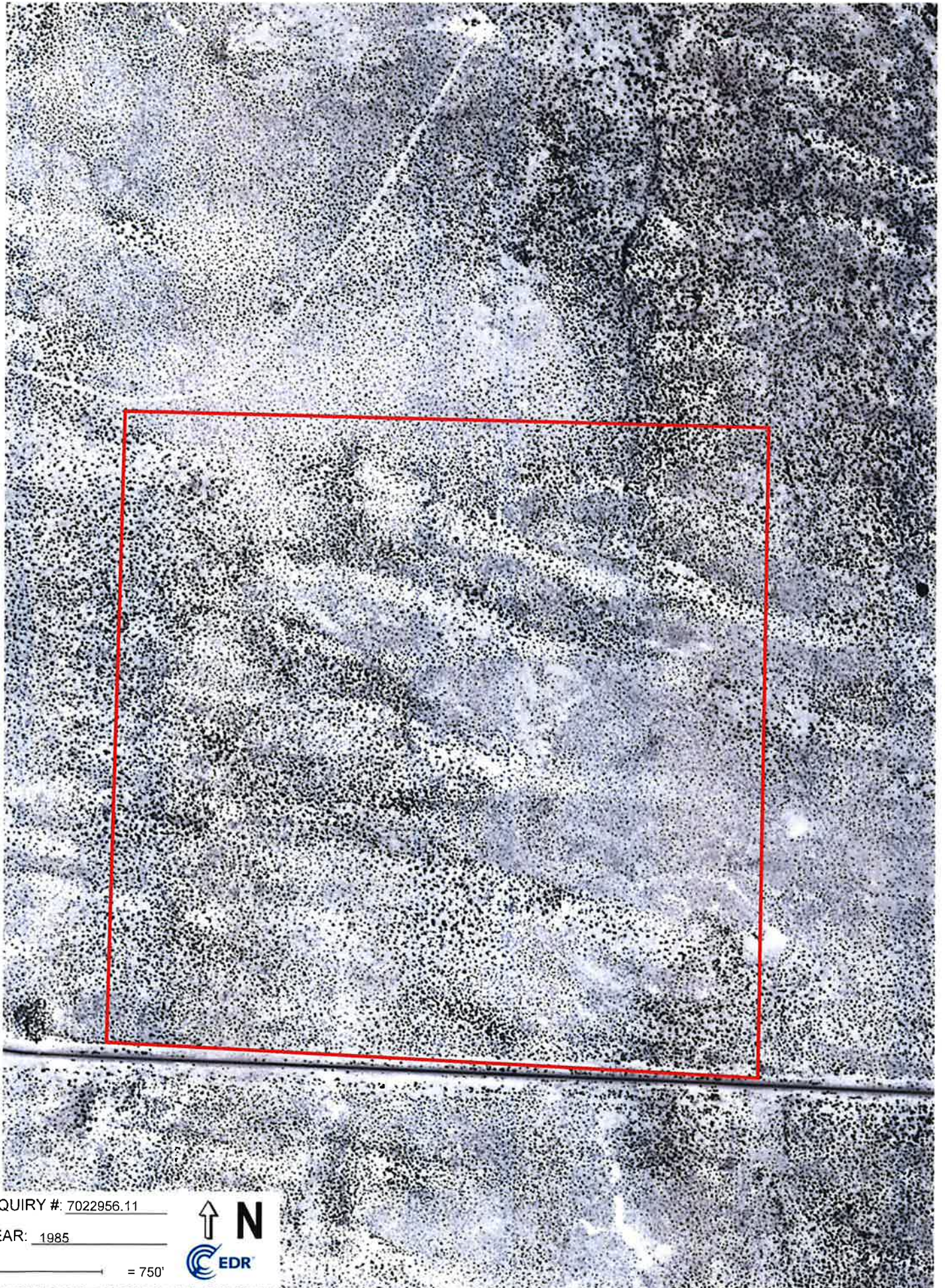


INQUIRY #: 7022956.11

YEAR: 1996

_____ = 750'



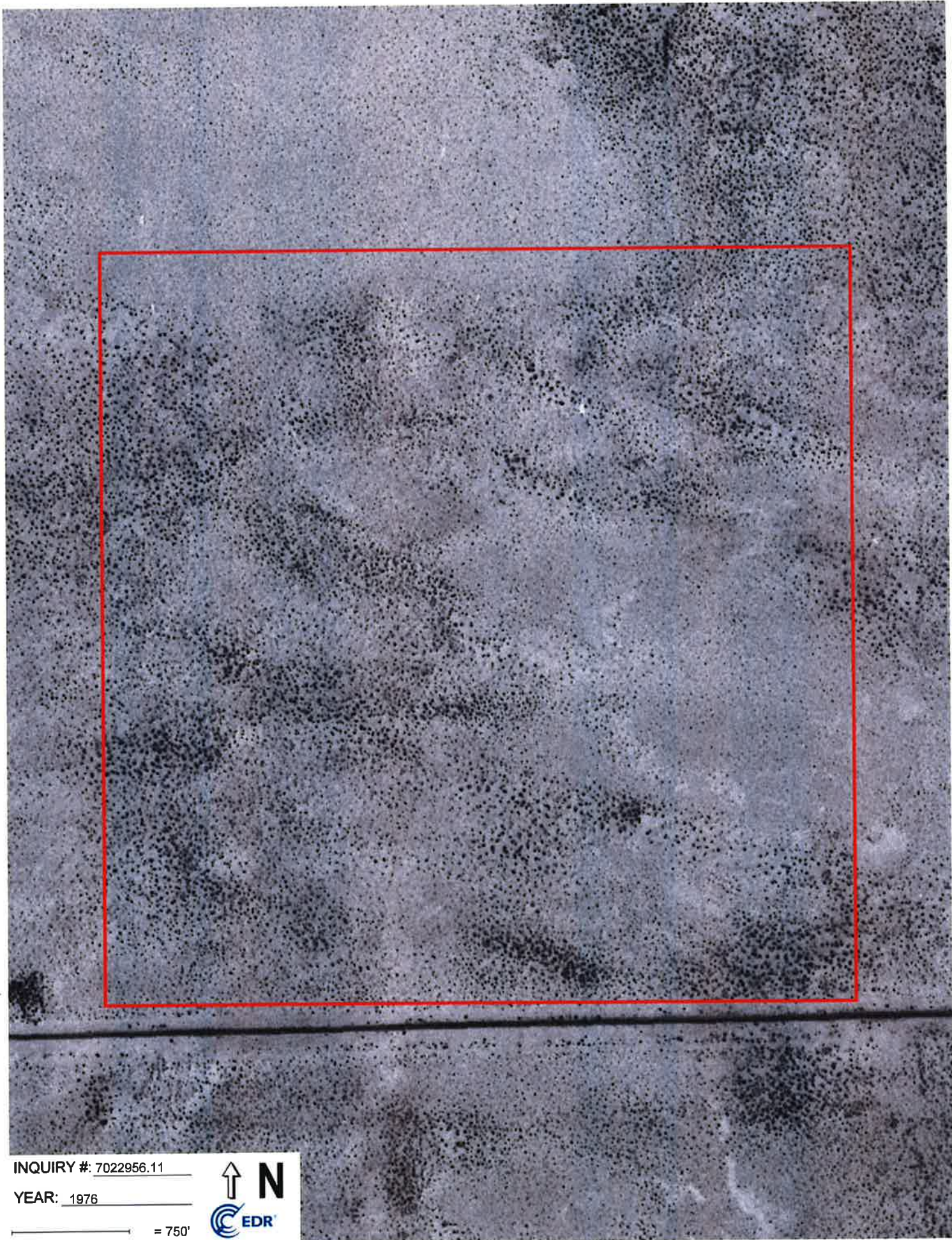


INQUIRY #: 7022956.11

YEAR: 1985

_____ = 750'





INQUIRY #: 7022956.11

YEAR: 1976

— = 750'

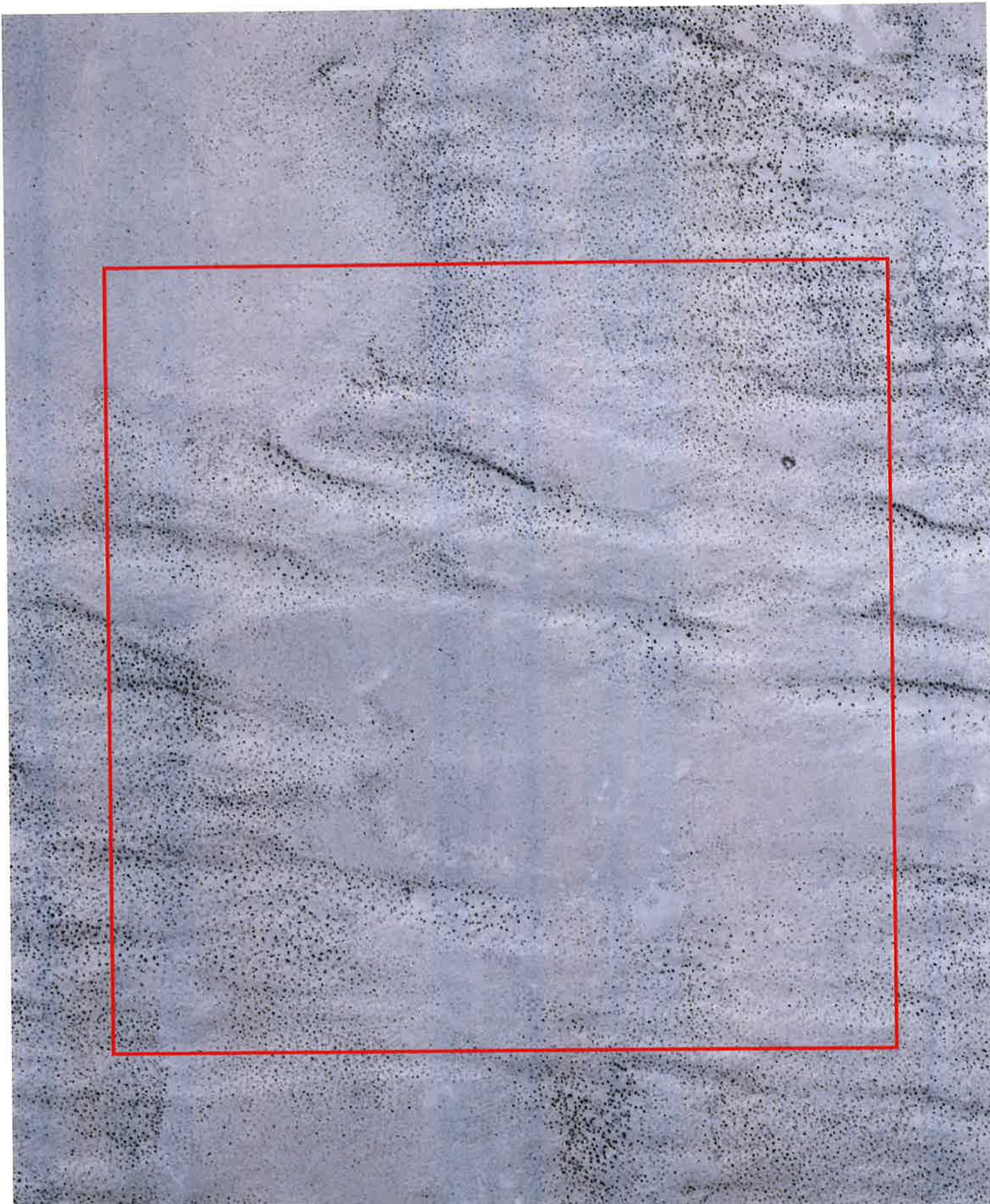


INQUIRY #: 7022956.11

YEAR: 1953

_____ = 750'





INQUIRY #: 7022956.11

YEAR: 1949

_____ = 750'






INQUIRY #: 7022956.11

YEAR: 1937

_____ = 750'



APPENDIX D



NorthStar 2 Solar
Hwy 78 and EHL Canal
Brawley, CA 92227

Inquiry Number: 7022956.4

June 17, 2022

EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

06/17/22

Site Name:

NorthStar 2 Solar
Hwy 78 and EHL Canal
Brawley, CA 92227
EDR Inquiry # 7022956.4

Client Name:

GS Lyon Consultants
780 N. Fourth Street
El Centro, CA 92243
Contact: Steven Williams



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by GS Lyon Consultants were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:**Coordinates:**

P.O.#	GS2220	Latitude:	32.977908 32° 58' 40" North
Project:	NorthStar 2 Solar Project	Longitude:	-115.27213 -115° 16' 20" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	661460.68
		UTM Y Meters:	3650163.25
		Elevation:	65.41' above sea level

Maps Provided:

2018 1907
2015
2012
1979
1953, 1954, 1956, 1957
1947
1945
1940

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets



Holtville NE

7.5-minute, 24000



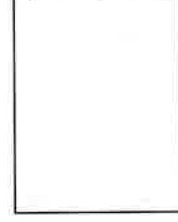
Glamis NW

7.5-minute, 24000



Amos

7.5-minute, 24000



Acolita

7.5-minute, 24000

2015 Source Sheets



Holtville NE

7.5-minute, 24000



Glamis NW

7.5-minute, 24000



Amos

7.5-minute, 24000



Acolita

7.5-minute, 24000

2012 Source Sheets



Holtville NE

7.5-minute, 24000



Glamis NW

7.5-minute, 24000



Amos

7.5-minute, 24000



Acolita

7.5-minute, 24000

1979 Source Sheets



Glamis NW

7.5-minute, 24000
Aerial Photo Revised 1976



Holtville NE

7.5-minute, 24000
Aerial Photo Revised 1976



GLAMIS NW

7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1953, 1954, 1956, 1957 Source Sheets



Acolita

7.5-minute, 24000
Aerial Photo Revised 1948



Glamis NW

7.5-minute, 24000
Aerial Photo Revised 1948



Amos

7.5-minute, 24000
Aerial Photo Revised 1953



Alamorio NE

7.5-minute, 24000
Aerial Photo Revised 1953



Holtville NE

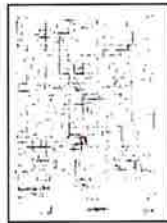
7.5-minute, 24000
Aerial Photo Revised 1953

1947 Source Sheets



IRIS

15-minute, 50000



ALAMORIO

15-minute, 50000

1945 Source Sheets



Alamorio

15-minute, 62500
Aerial Photo Revised 1940



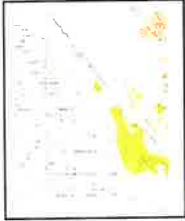
Iris

15-minute, 62500
Aerial Photo Revised 1940

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1940 Source Sheets



Iris

15-minute, 62500
Aerial Photo Revised 1940



Alamorio

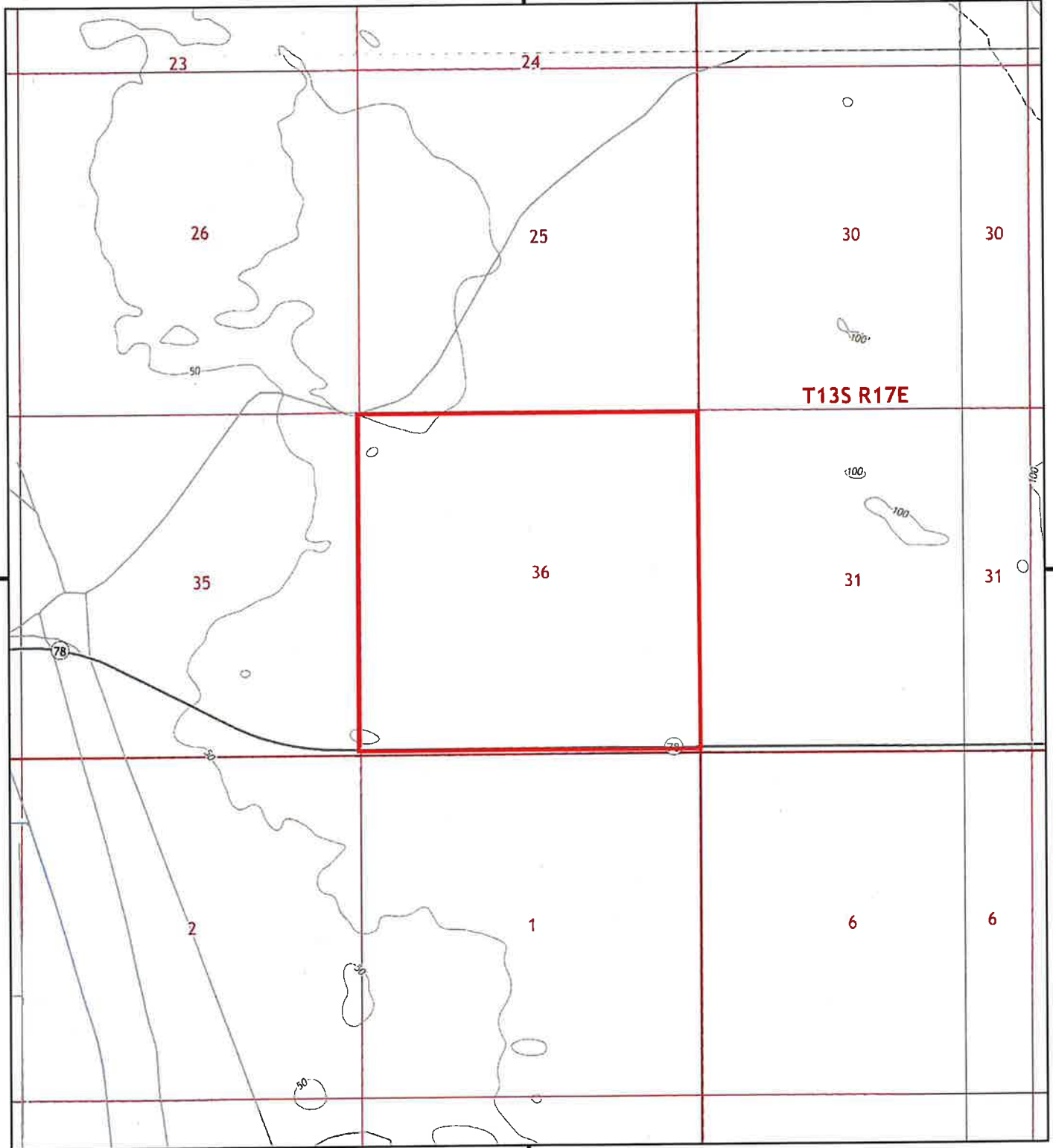
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Aerial Photo Revised 1940

1907 Source Sheets

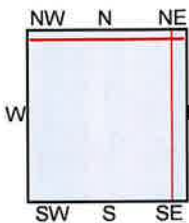


Holtville

30-minute, 125000



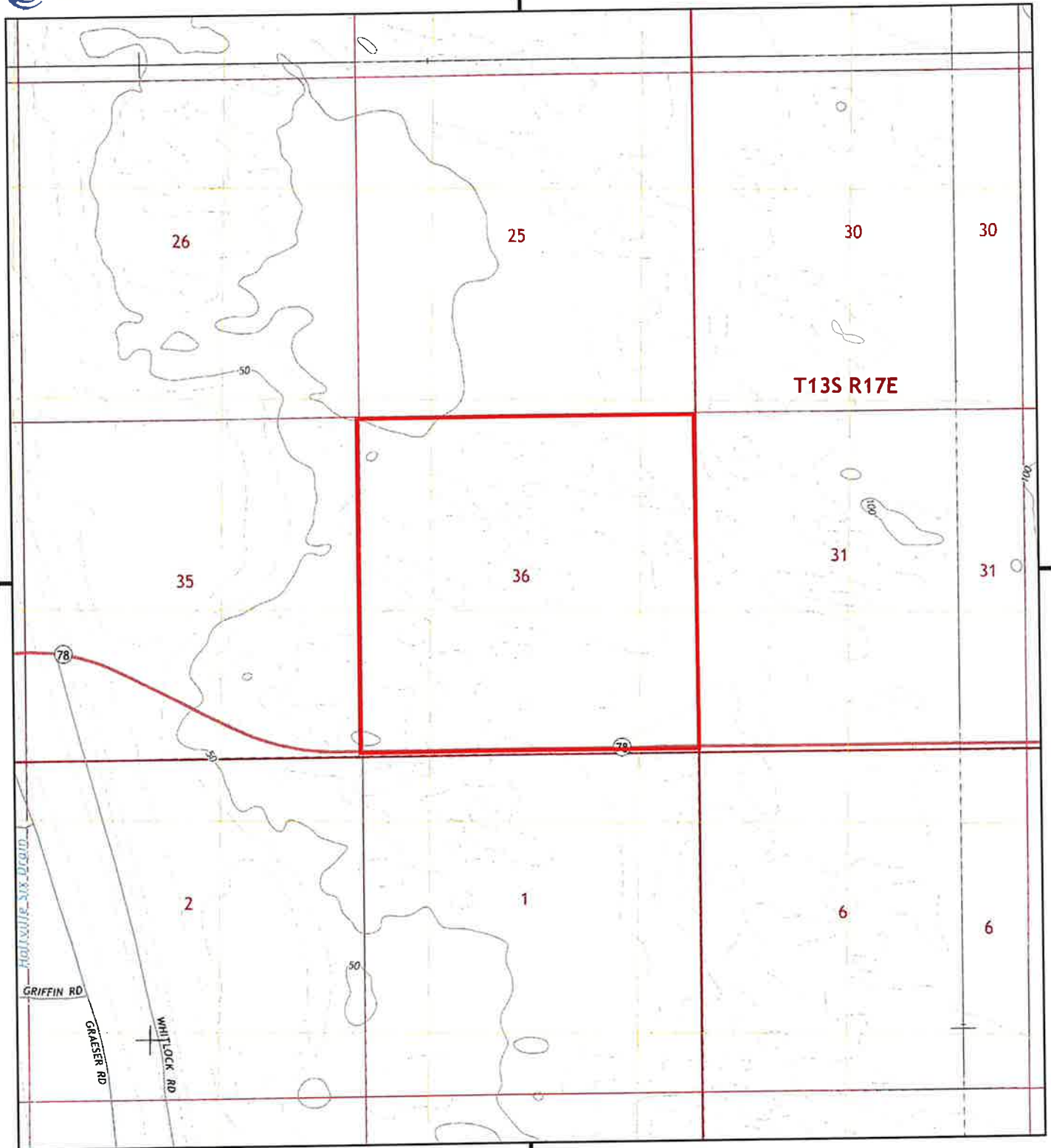
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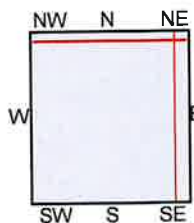
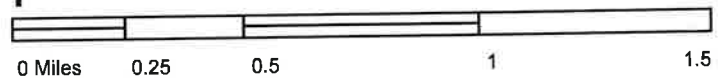
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N, Amos, 2018, 7.5-minute
NE, Acolita, 2018, 7.5-minute
SE, Glamis NW, 2018, 7.5-minute

SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants





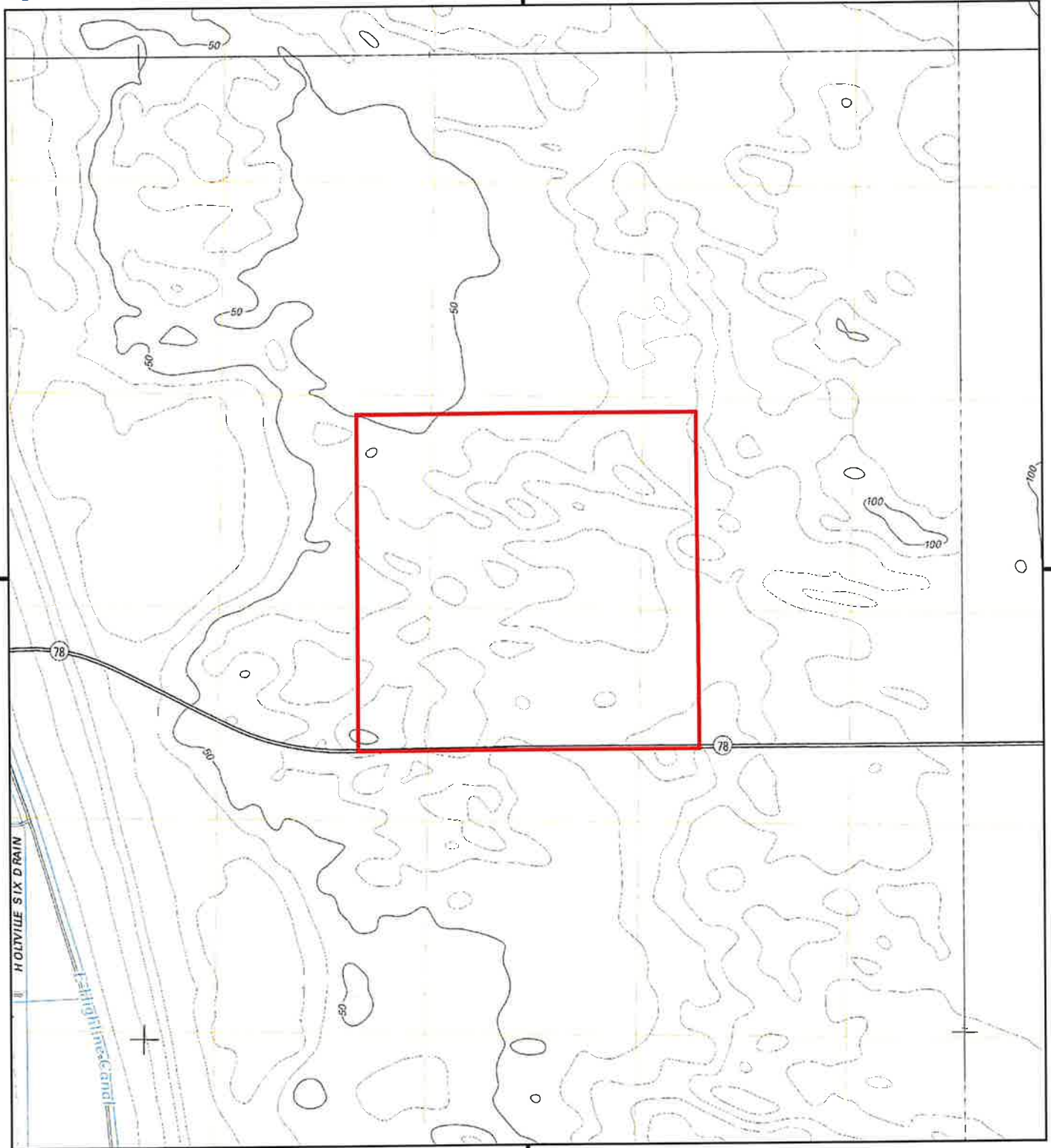
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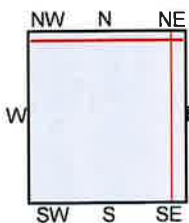
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SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants





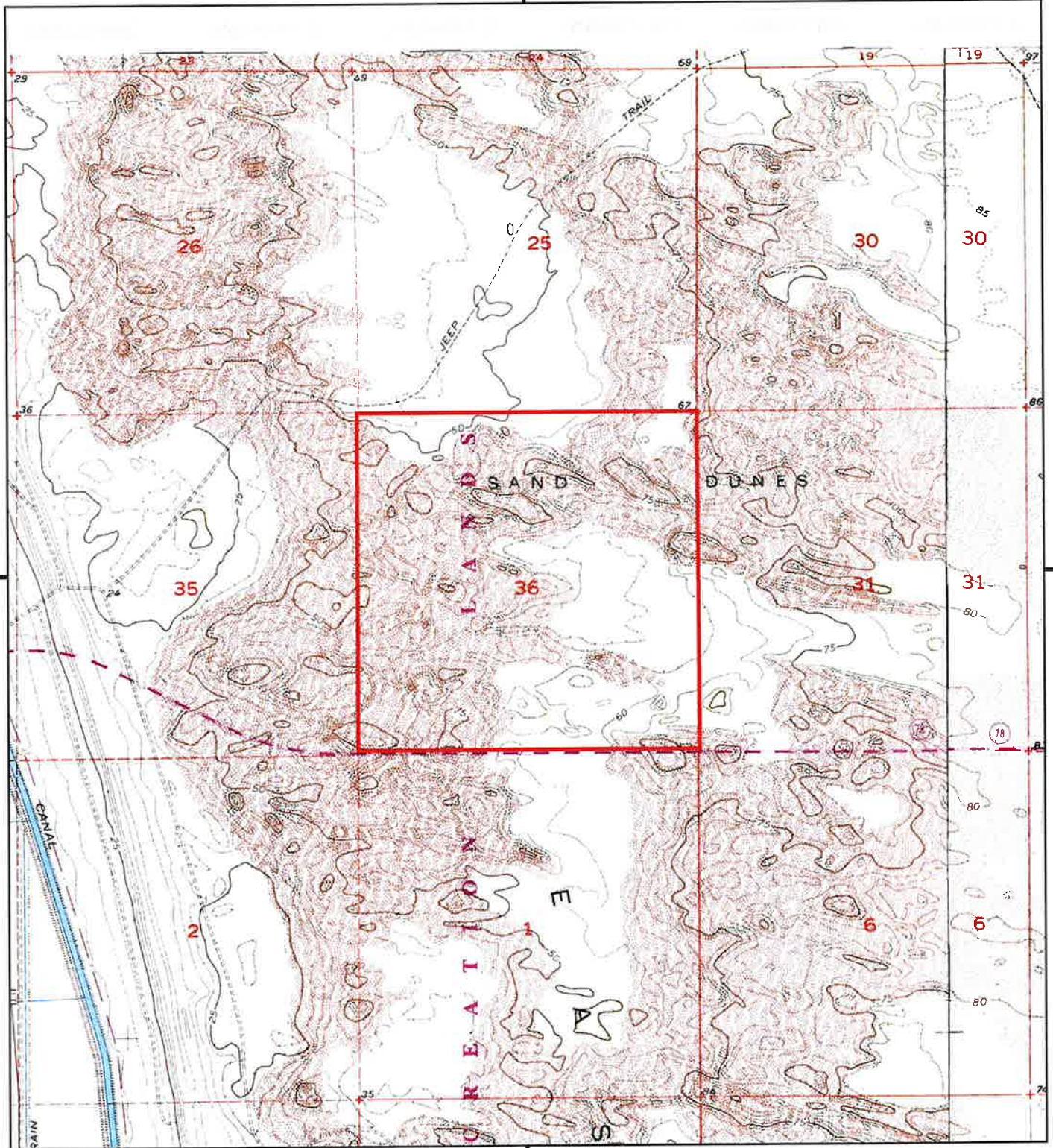
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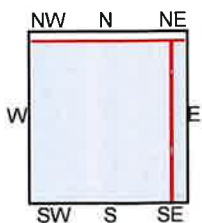
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SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants





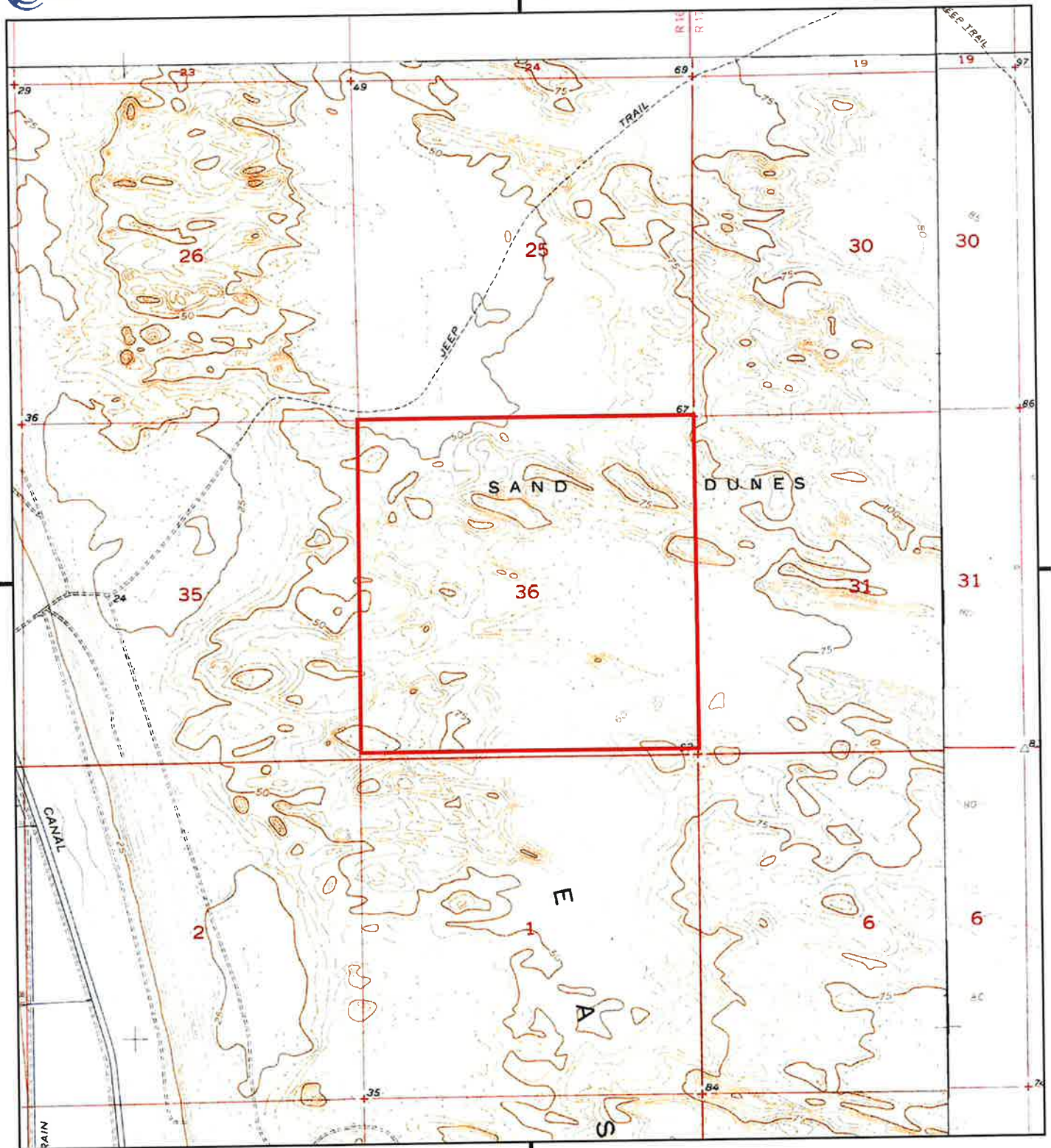
This report includes information from the following map sheet(s).



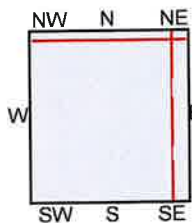
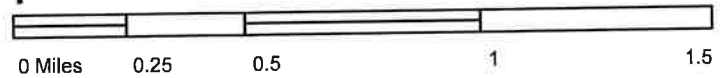
TP, Holtville NE, 1979, 7.5-minute
 SE, Glamis NW, 1979, 7.5-minute
 SE, GLAMIS NW, 1979, 7.5-minute

SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
 Brawley, CA 92227
CLIENT: GS Lyon Consultants





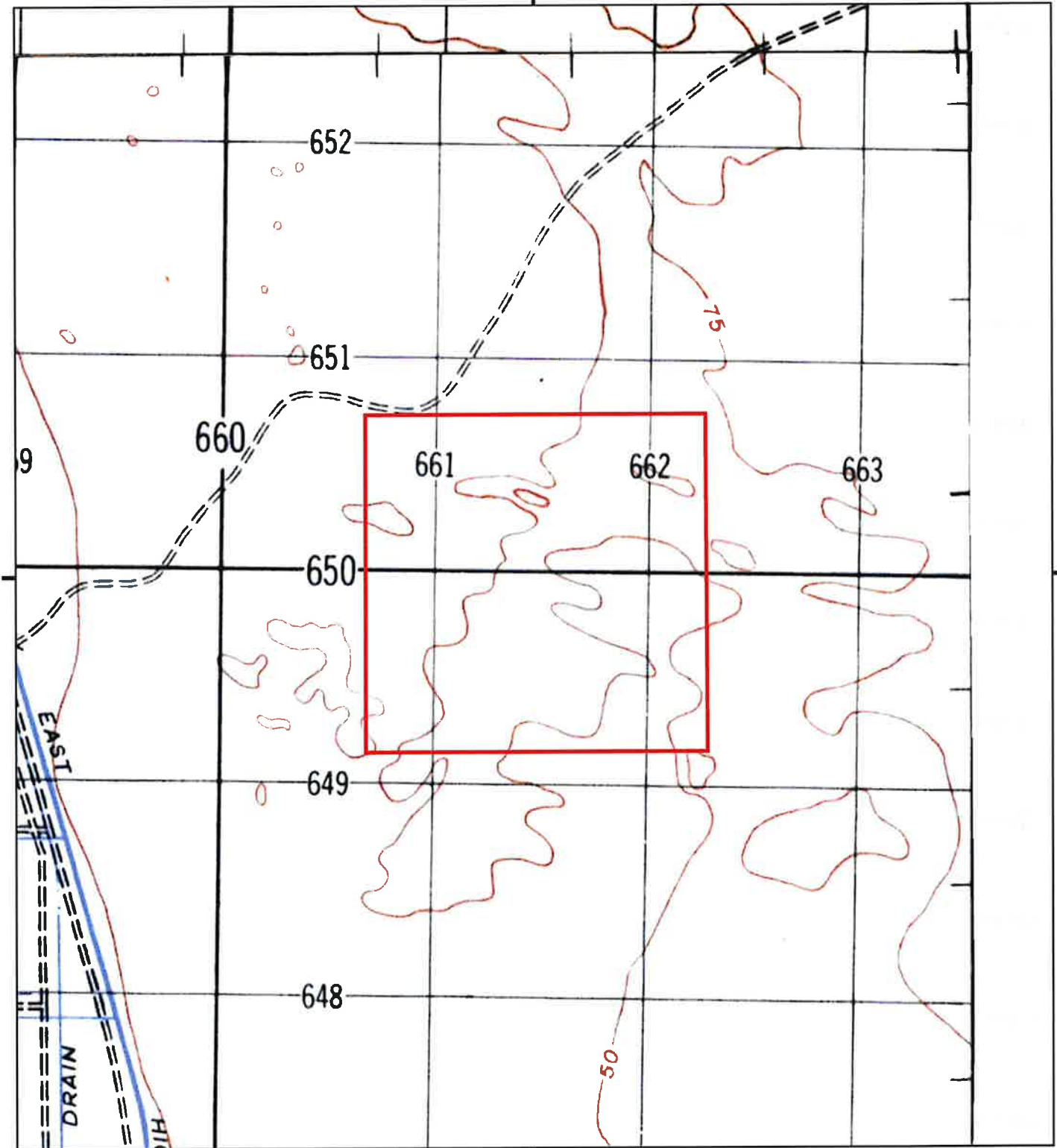
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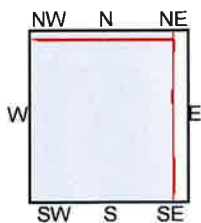
- TP, Alamo NE, 1957, 7.5-minute
- N, Amos, 1956, 7.5-minute
- NE, Acolita, 1953, 7.5-minute
- SE, Glamis NW, 1954, 7.5-minute
- TP, Holtville NE, 1957, 7.5-minute

SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
 Brawley, CA 92227
CLIENT: GS Lyon Consultants





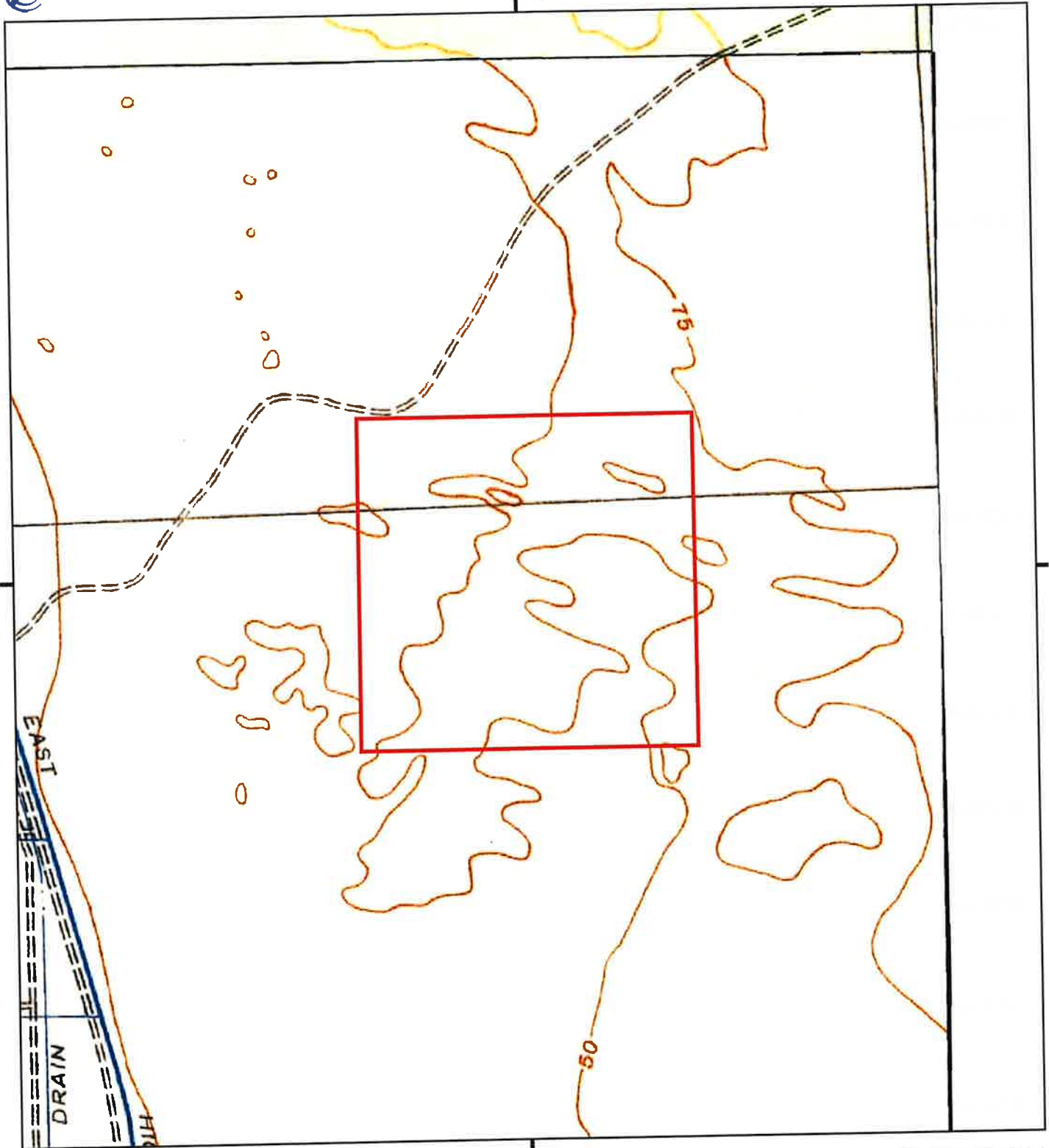
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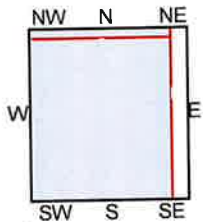
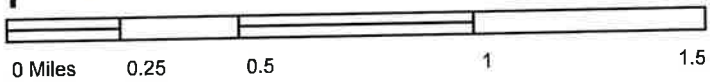
TP, ALAMORIO, 1947, 15-minute
NW, IRIS, 1947, 15-minute

SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants





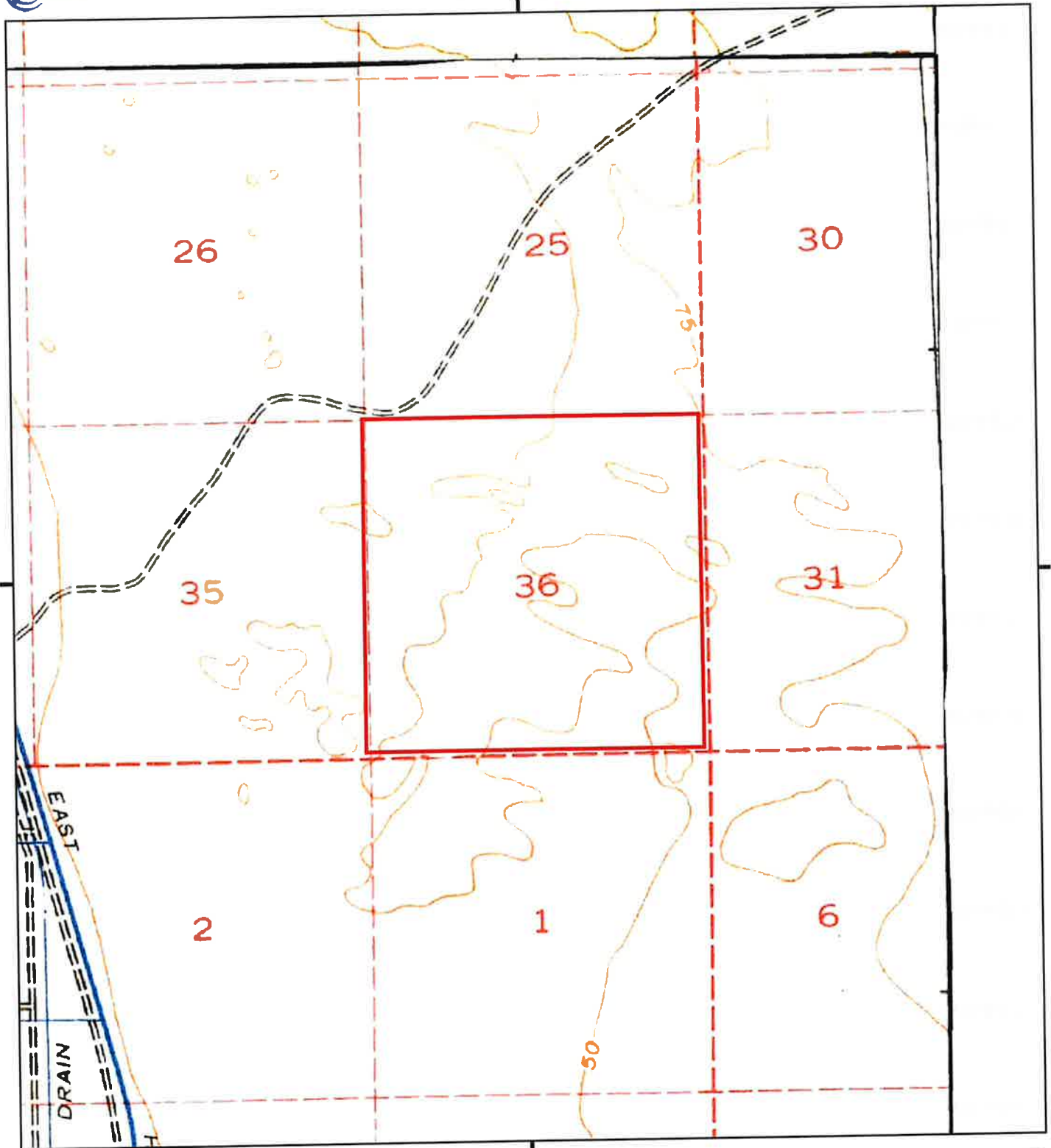
This report includes information from the following map sheet(s).



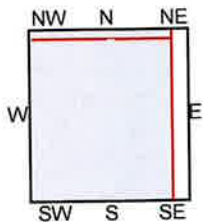
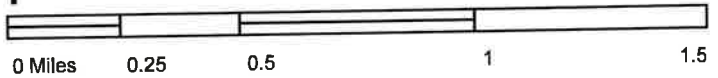
TP, Alamo, 1945, 15-minute
NW, Iris, 1945, 15-minute

SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants





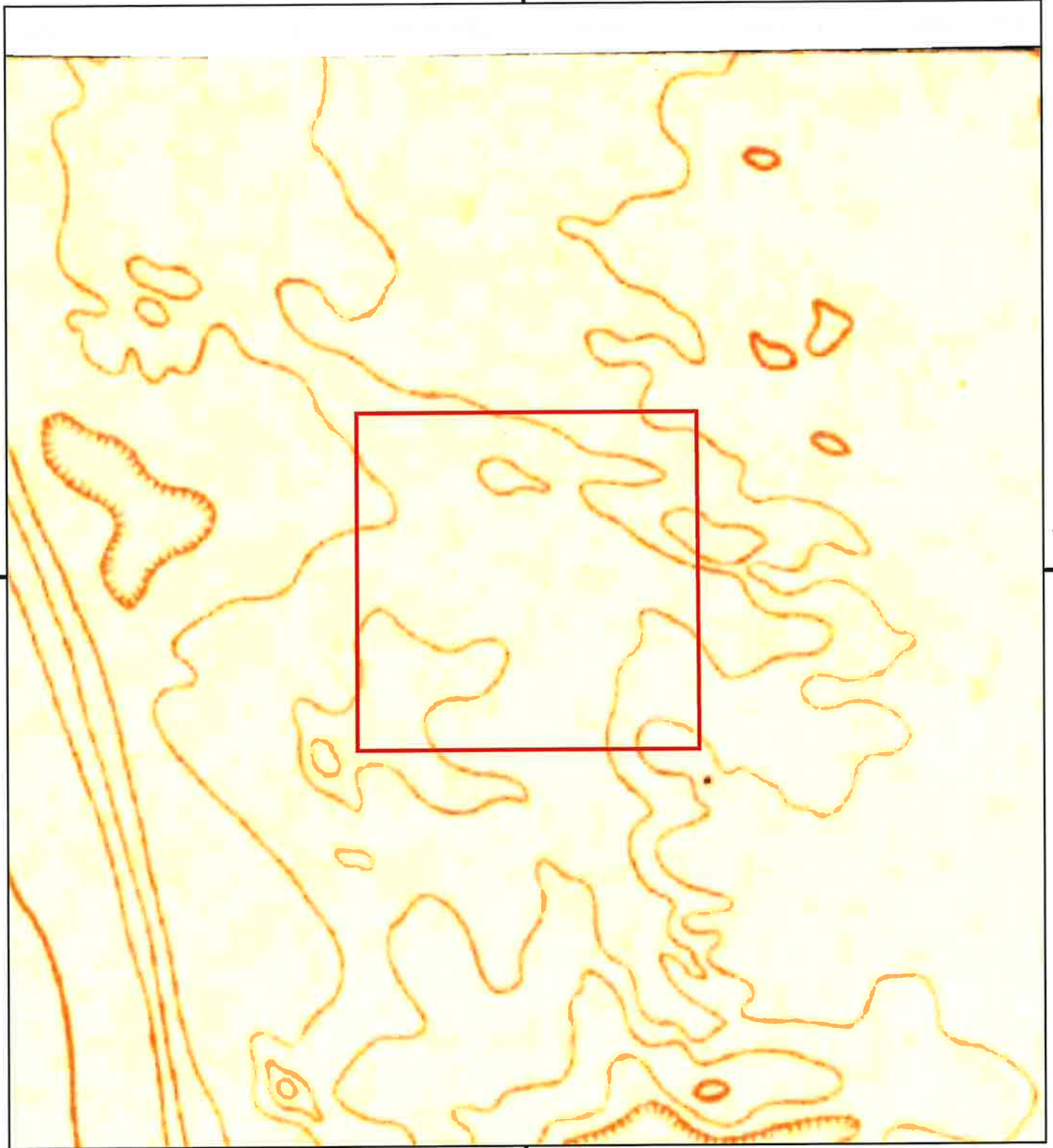
This report includes information from the following map sheet(s).



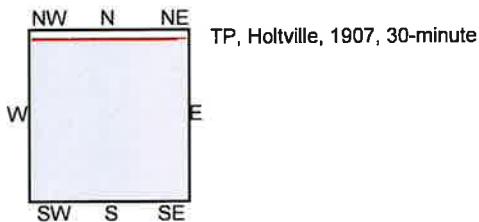
TP, Alamo, 1940, 15-minute
NW, Iris, 1940, 15-minute

SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants






This report includes information from the following map sheet(s).



SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley, CA 92227
CLIENT: GS Lyon Consultants



APPENDIX E



NorthStar 2 Solar
Hwy 78 and EHL Canal
Brawley, CA 92227

Inquiry Number: 7022956.3
June 17, 2022

Certified Sanborn® Map Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

06/17/22

Site Name:

NorthStar 2 Solar
Hwy 78 and EHL Canal
Brawley, CA 92227
EDR Inquiry # 7022956.3

Client Name:

GS Lyon Consultants
780 N. Fourth Street
El Centro, CA 92243
Contact: Steven Williams



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by GS Lyon Consultants were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # BAAC-4954-92EB
PO # GS2220
Project NorthStar 2 Solar Project



Sanborn® Library search results

Certification #: BAAC-4954-92EB

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX F

NorthStar 2 Solar
Hwy 78 and EHL Canal
Brawley, CA 92227

Inquiry Number: 7022956.2s
June 17, 2022

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
 Please contact EDR at 1-800-352-0050
 with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527-21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

HWY 78 AND EHL CANAL
BRAWLEY, CA 92227

COORDINATES

Latitude (North):	32.9779080 - 32° 58' 40.46"
Longitude (West):	115.2721300 - 115° 16' 19.66"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	661464.2
UTM Y (Meters):	3649972.2
Elevation:	65 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12008834 HOLTVILLE NE, CA
Version Date:	2018
North Map:	11994350 AMOS, CA
Version Date:	2018
Northeast Map:	11994348 ACOLITA, CA
Version Date:	2018
Southeast Map:	12008826 GLAMIS NW, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140606
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
HWY 78 AND EHL CANAL
BRAWLEY, CA 92227

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
--------	-----------	---------	-------------------	--------------------	-------------------------------

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL..... National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS..... Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-VSQG..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System

EXECUTIVE SUMMARY

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE..... State Response Sites

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR..... EnviroStor Database

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF..... Solid Waste Information System

Lists of state and tribal leaking storage tanks

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC..... Statewide SLIC Cases

Lists of state and tribal registered storage tanks

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

BROWNFIELDS..... Considered Brownfields Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

EXECUTIVE SUMMARY

ODI..... Open Dump Inventory
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
CDL..... Clandestine Drug Labs
Toxic Pits..... Toxic Pits Cleanup Act Sites
CERS HAZ WASTE..... CERS HAZ WASTE
US CDL..... National Clandestine Laboratory Register
AQUEOUS FOAM..... Former Fire Training Facility Assessments Listing
PFAS..... PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST..... SWEEPS UST Listing
HIST UST..... Hazardous Substance Storage Container Database
CA FID UST..... Facility Inventory Database
CERS TANKS..... California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS..... Environmental Liens Listing
LIENS 2..... CERCLA Lien Information
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

EXECUTIVE SUMMARY

MLTS.....	Material Licensing Tracking System
COAL ASH DOE.....	Steam-Electric Plant Operation Data
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER.....	PCB Transformer Registration Database
RADINFO.....	Radiation Information Database
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS.....	Incident and Accident Data
CONSENT.....	Superfund (CERCLA) Consent Decrees
INDIAN RESERV.....	Indian Reservations
FUSRAP.....	Formerly Utilized Sites Remedial Action Program
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US MINES.....	Mines Master Index File
ABANDONED MINES.....	Abandoned Mines
FINDS.....	Facility Index System/Facility Registry System
UXO.....	Unexploded Ordnance Sites
ECHO.....	Enforcement & Compliance History Information
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN.....	Bond Expenditure Plan
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings.....	CUPA Resources List
DRYCLEANERS.....	Cleaner Facilities
EMI.....	Emissions Inventory Data
ENF.....	Enforcement Action Listing
Financial Assurance.....	Financial Assurance Information Listing
HAZNET.....	Facility and Manifest Data
ICE.....	ICE
HIST CORTESE.....	Hazardous Waste & Substance Site List
HWP.....	EnviroStor Permitted Facilities Listing
HWT.....	Registered Hazardous Waste Transporter Database
MINES.....	Mines Site Location Listing
MWMP.....	Medical Waste Management Program Listing
NPDES.....	NPDES Permits Listing
PEST LIC.....	Pesticide Regulation Licenses Listing
PROC.....	Certified Processors Database
Notify 65.....	Proposition 65 Records
UIC.....	UIC Listing
UIC GEO.....	UIC GEO (GEOTRACKER)
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WDS.....	Waste Discharge System
WIP.....	Well Investigation Program Case List
MILITARY PRIV SITES.....	MILITARY PRIV SITES (GEOTRACKER)
PROJECT.....	PROJECT (GEOTRACKER)
WDR.....	Waste Discharge Requirements Listing
CIWQS.....	California Integrated Water Quality System
CERS.....	CERS
NON-CASE INFO.....	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS.....	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS.....	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT.....	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ.....	Well Stimulation Project (GEOTRACKER)
HWTS.....	Hazardous Waste Tracking System
MINES MRDS.....	Mineral Resources Data System

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historical Auto Stations
EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

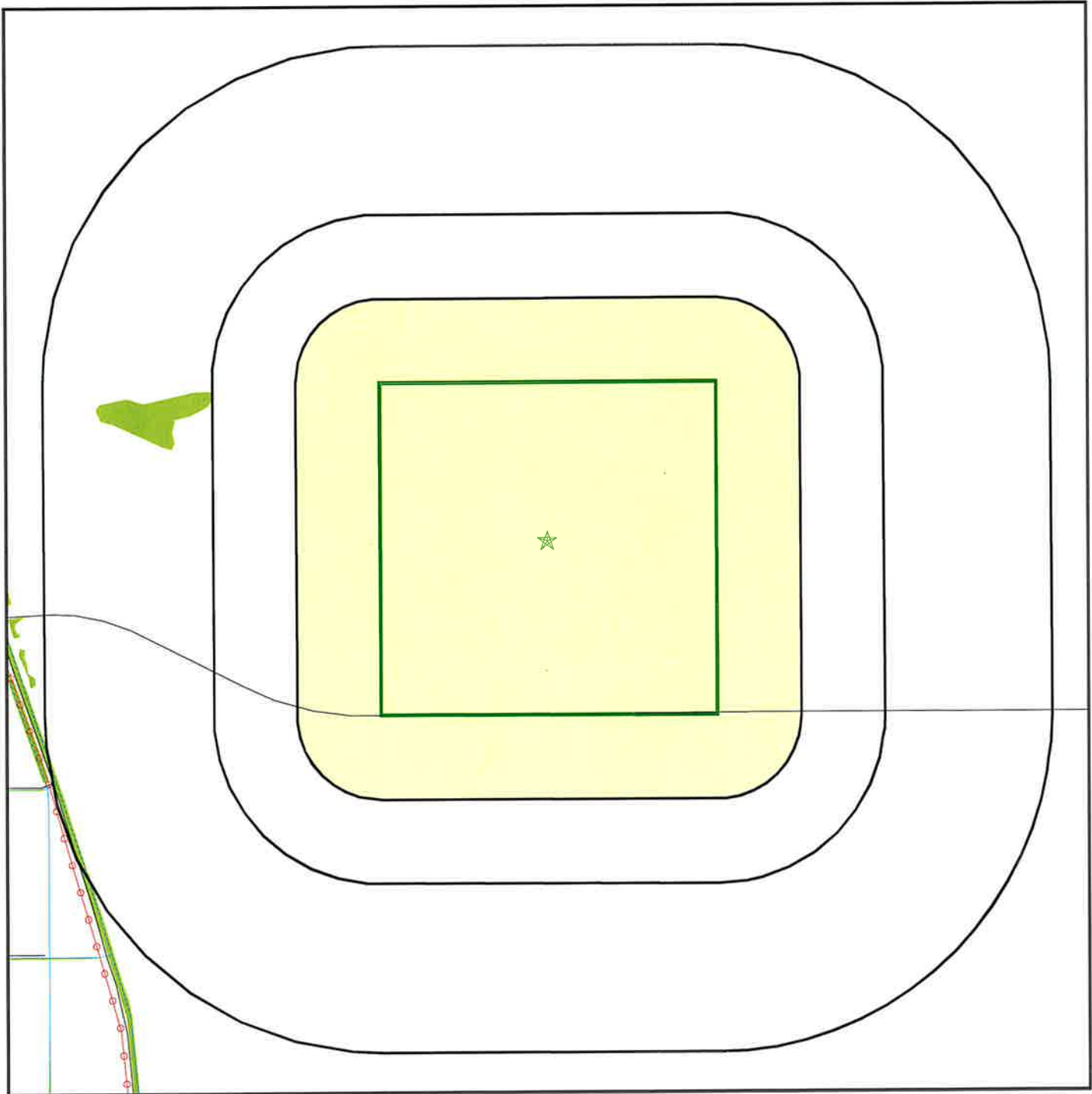
Site Name

Database(s)






NEWMONT GOLD COMPANY-MESQUITE MINE

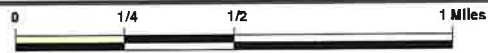
SWF/LF








OVERVIEW MAP - 7022956.2S



 Target Property

-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Dept. Defense Sites



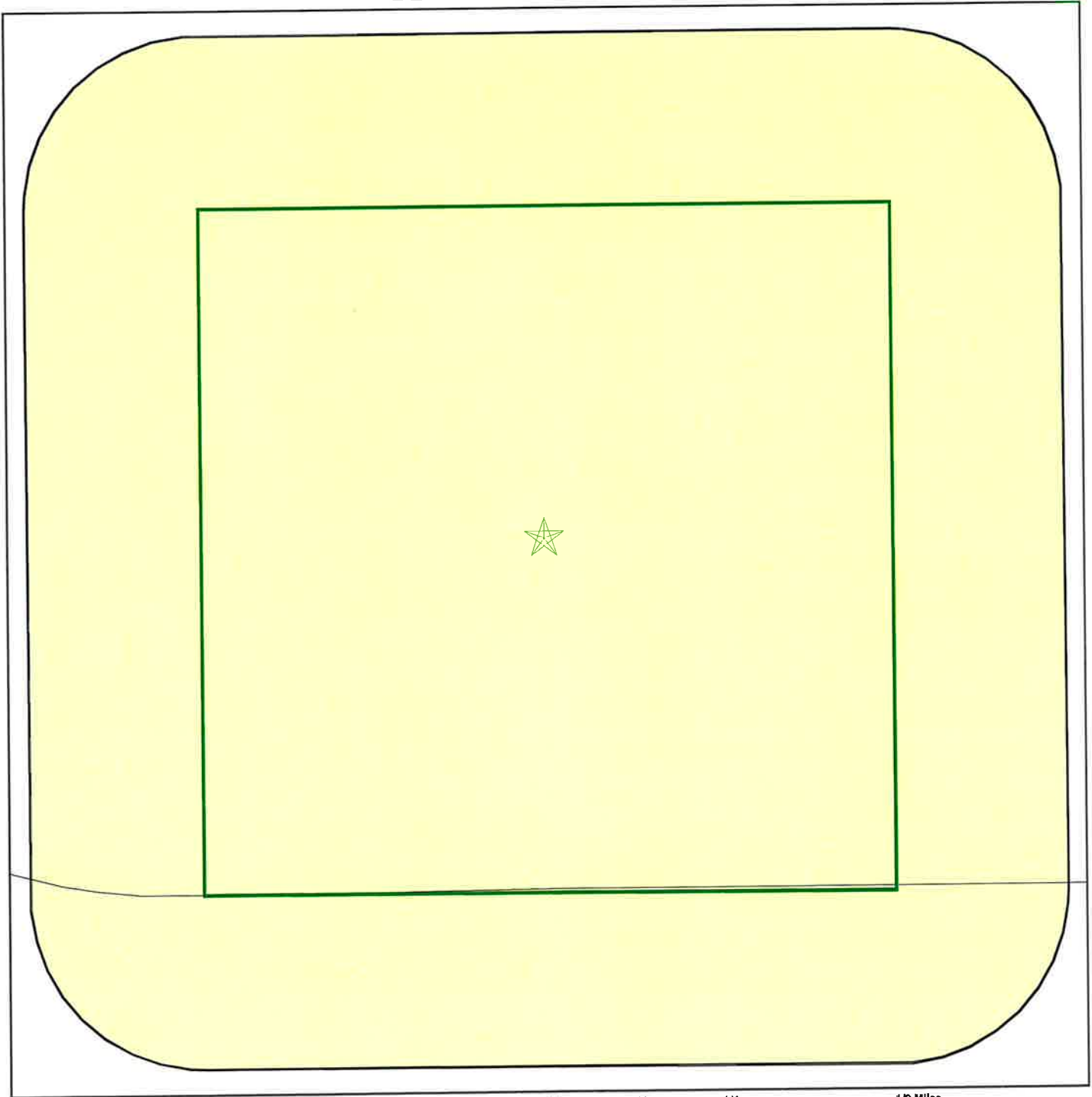
-  Indian Reservations BIA
-  Power transmission lines
-  Special Flood Hazard Area (1%)
-  0.2% Annual Chance Flood Hazard
-  National Wetland Inventory
-  State Wetlands
-  Areas of Concern



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

<p>SITE NAME: NorthStar 2 Solar ADDRESS: Hwy 78 and EHL Canal Brawley CA 92227 LAT/LONG: 32.977908 / 115.27213</p>	<p>CLIENT: GS Lyon Consultants CONTACT: Steven Williams INQUIRY #: 7022956.2s DATE: June 17, 2022 1:33 pm</p>
--	--

DETAIL MAP - 7022956.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

Areas of Concern



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

<p>SITE NAME: NorthStar 2 Solar ADDRESS: Hwy 78 and EHL Canal Brawley CA 92227 LAT/LONG: 32.977908 / 115.27213</p>	<p>CLIENT: GS Lyon Consultants CONTACT: Steven Williams INQUIRY #: 7022956.2s DATE: June 17, 2022 1:33 pm</p>
---	--

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
<u>STANDARD ENVIRONMENTAL RECORDS</u>								
<i>Lists of Federal NPL (Superfund) sites</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<i>Lists of Federal Delisted NPL sites</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Lists of Federal sites subject to CERCLA removals and CERCLA orders</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Lists of Federal CERCLA sites with NFRAP</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA facilities undergoing Corrective Action</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Lists of Federal RCRA TSD facilities</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA generators</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	0.001		0	NR	NR	NR	NR	0
<i>Lists of state- and tribal (Superfund) equivalent sites</i>								
RESPONSE	1.000		0	0	0	0	NR	0
<i>Lists of state- and tribal hazardous waste facilities</i>								
ENVIROSTOR	1.000		0	0	0	0	NR	0
<i>Lists of state and tribal landfills and solid waste disposal facilities</i>								
SWF/LF	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
<i>Lists of state and tribal leaking storage tanks</i>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal registered storage tanks</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<i>Lists of state and tribal voluntary cleanup sites</i>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal brownfield sites</i>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Registered Storage Tanks</i>								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s) EDR ID Number
EPA ID Number

NO SITES FOUND

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BRAWLEY	S126983083	NEWMONT GOLD COMPANY-MESQUITE MINE	6502 HWY 78, 6 MI NORTH EAST O	92227	SWF/LF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/27/2022	Source: EPA
Date Data Arrived at EDR: 05/05/2022	Telephone: N/A
Date Made Active in Reports: 05/31/2022	Last EDR Contact: 06/01/2022
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/27/2022	Source: EPA
Date Data Arrived at EDR: 05/05/2022	Telephone: N/A
Date Made Active in Reports: 05/31/2022	Last EDR Contact: 06/01/2022
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/05/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 06/01/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 06/24/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/01/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/05/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 26

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/01/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/27/2022	Source: EPA
Date Data Arrived at EDR: 05/05/2022	Telephone: 800-424-9346
Date Made Active in Reports: 05/31/2022	Last EDR Contact: 06/01/2022
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 02/28/2022	Source: EPA
Date Data Arrived at EDR: 03/02/2022	Telephone: 800-424-9346
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

RCRA-VSQQ: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/08/2022	Source: Department of the Navy
Date Data Arrived at EDR: 02/11/2022	Telephone: 843-820-7326
Date Made Active in Reports: 05/10/2022	Last EDR Contact: 05/05/2022
Number of Days to Update: 88	Next Scheduled EDR Contact: 08/22/2022
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/21/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/23/2022	Telephone: 703-603-0695
Date Made Active in Reports: 05/24/2022	Last EDR Contact: 05/24/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 09/05/2022
	Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/21/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/23/2022	Telephone: 703-603-0695
Date Made Active in Reports: 05/24/2022	Last EDR Contact: 05/04/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 09/05/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/01/2022
Date Made Active in Reports: 03/10/2022
Number of Days to Update: 9

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/15/2022
Next Scheduled EDR Contact: 10/03/2022
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/24/2022
Date Data Arrived at EDR: 01/25/2022
Date Made Active in Reports: 04/13/2022
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/26/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/24/2022
Date Data Arrived at EDR: 01/25/2022
Date Made Active in Reports: 04/13/2022
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/26/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/07/2022
Date Data Arrived at EDR: 02/08/2022
Date Made Active in Reports: 05/05/2022
Number of Days to Update: 86

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/09/2022
Next Scheduled EDR Contact: 08/22/2022
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003	Source: California Regional Water Quality Control Board Lahontan Region (6)
Date Data Arrived at EDR: 09/10/2003	Telephone: 530-542-5572
Date Made Active in Reports: 10/07/2003	Last EDR Contact: 09/12/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001	Source: California Regional Water Quality Control Board San Diego Region (9)
Date Data Arrived at EDR: 04/23/2001	Telephone: 858-637-5595
Date Made Active in Reports: 05/21/2001	Last EDR Contact: 09/26/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 01/09/2012
	Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005	Source: California Regional Water Quality Control Board Santa Ana Region (8)
Date Data Arrived at EDR: 02/15/2005	Telephone: 909-782-4496
Date Made Active in Reports: 03/28/2005	Last EDR Contact: 08/15/2011
Number of Days to Update: 41	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004	Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Date Data Arrived at EDR: 02/26/2004	Telephone: 760-776-8943
Date Made Active in Reports: 03/24/2004	Last EDR Contact: 08/01/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calaveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008	Source: California Regional Water Quality Control Board Central Valley Region (5)
Date Data Arrived at EDR: 07/22/2008	Telephone: 916-464-4834
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 07/01/2011
Number of Days to Update: 9	Next Scheduled EDR Contact: 10/17/2011
	Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004	Source: California Regional Water Quality Control Board Los Angeles Region (4)
Date Data Arrived at EDR: 09/07/2004	Telephone: 213-576-6710
Date Made Active in Reports: 10/12/2004	Last EDR Contact: 09/06/2011
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 05/24/2022
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/08/2022
Number of Days to Update: 85

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 06/13/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/2021 Source: EPA Region 6
Date Data Arrived at EDR: 11/15/2021 Telephone: 214-665-6597
Date Made Active in Reports: 02/08/2022 Last EDR Contact: 06/13/2022
Number of Days to Update: 85 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021 Source: EPA Region 1
Date Data Arrived at EDR: 06/11/2021 Telephone: 617-918-1313
Date Made Active in Reports: 09/07/2021 Last EDR Contact: 06/13/2022
Number of Days to Update: 88 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/12/2021 Source: EPA Region 8
Date Data Arrived at EDR: 11/15/2021 Telephone: 303-312-6271
Date Made Active in Reports: 02/08/2022 Last EDR Contact: 06/13/2022
Number of Days to Update: 85 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/12/2021 Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/15/2021 Telephone: 415-972-3372
Date Made Active in Reports: 02/08/2022 Last EDR Contact: 06/13/2022
Number of Days to Update: 85 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/12/2021 Source: EPA Region 10
Date Data Arrived at EDR: 11/15/2021 Telephone: 206-553-2857
Date Made Active in Reports: 02/08/2022 Last EDR Contact: 06/13/2022
Number of Days to Update: 85 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/28/2021 Source: EPA Region 4
Date Data Arrived at EDR: 06/22/2021 Telephone: 404-562-8677
Date Made Active in Reports: 09/20/2021 Last EDR Contact: 06/13/2022
Number of Days to Update: 90 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2021 Source: EPA, Region 5
Date Data Arrived at EDR: 11/15/2021 Telephone: 312-886-7439
Date Made Active in Reports: 02/08/2022 Last EDR Contact: 06/13/2022
Number of Days to Update: 85 Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/23/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 05/23/2022	Telephone: 866-480-1028
Date Made Active in Reports: 05/24/2022	Last EDR Contact: 05/23/2022
Number of Days to Update: 1	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003	Source: California Regional Water Quality Control Board, North Coast Region (1)
Date Data Arrived at EDR: 04/07/2003	Telephone: 707-576-2220
Date Made Active in Reports: 04/25/2003	Last EDR Contact: 08/01/2011
Number of Days to Update: 18	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004	Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Date Data Arrived at EDR: 10/20/2004	Telephone: 510-286-0457
Date Made Active in Reports: 11/19/2004	Last EDR Contact: 09/19/2011
Number of Days to Update: 30	Next Scheduled EDR Contact: 01/02/2012
	Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006	Source: California Regional Water Quality Control Board Central Coast Region (3)
Date Data Arrived at EDR: 05/18/2006	Telephone: 805-549-3147
Date Made Active in Reports: 06/15/2006	Last EDR Contact: 07/18/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 10/31/2011
	Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004	Source: Region Water Quality Control Board Los Angeles Region (4)
Date Data Arrived at EDR: 11/18/2004	Telephone: 213-576-6600
Date Made Active in Reports: 01/04/2005	Last EDR Contact: 07/01/2011
Number of Days to Update: 47	Next Scheduled EDR Contact: 10/17/2011
	Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005	Source: Regional Water Quality Control Board Central Valley Region (5)
Date Data Arrived at EDR: 04/05/2005	Telephone: 916-464-3291
Date Made Active in Reports: 04/21/2005	Last EDR Contact: 09/12/2011
Number of Days to Update: 16	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/14/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 88

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/07/2022	Source: SWRCB
Date Data Arrived at EDR: 03/08/2022	Telephone: 916-341-5851
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 06/07/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 05/23/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 05/23/2022	Telephone: 866-480-1028
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 05/23/2022
Number of Days to Update: 10	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/07/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/08/2022	Telephone: 916-327-7844
Date Made Active in Reports: 06/03/2022	Last EDR Contact: 06/09/2022
Number of Days to Update: 87	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 07/12/2016	Telephone: 916-327-5092
Date Made Active in Reports: 09/19/2016	Last EDR Contact: 06/09/2022
Number of Days to Update: 69	Next Scheduled EDR Contact: 09/26/2022
	Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/14/2021	Source: EPA, Region 1
Date Data Arrived at EDR: 11/15/2021	Telephone: 617-918-1313
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/06/2021	Source: EPA Region 5
Date Data Arrived at EDR: 06/11/2021	Telephone: 312-886-6136
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/13/2022
Number of Days to Update: 88	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/12/2021	Source: EPA Region 6
Date Data Arrived at EDR: 11/15/2021	Telephone: 214-665-7591
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/28/2021	Source: EPA Region 4
Date Data Arrived at EDR: 06/22/2021	Telephone: 404-562-9424
Date Made Active in Reports: 09/20/2021	Last EDR Contact: 06/13/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 7
Date Data Arrived at EDR: 11/15/2021	Telephone: 913-551-7003
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 8
Date Data Arrived at EDR: 11/15/2021	Telephone: 303-312-6137
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 9
Date Data Arrived at EDR: 11/15/2021	Telephone: 415-972-3368
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/12/2021	Source: EPA Region 10
Date Data Arrived at EDR: 11/15/2021	Telephone: 206-553-2857
Date Made Active in Reports: 02/08/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 06/15/2022
Number of Days to Update: 142	Next Scheduled EDR Contact: 10/03/2022
	Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/24/2022	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/25/2022	Telephone: 916-323-3400
Date Made Active in Reports: 04/13/2022	Last EDR Contact: 04/26/2022
Number of Days to Update: 78	Next Scheduled EDR Contact: 08/08/2022
	Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 07/08/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfields Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/21/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/21/2022	Telephone: 916-323-7905
Date Made Active in Reports: 06/14/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 02/23/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/10/2022	Telephone: 202-566-2777
Date Made Active in Reports: 03/10/2022	Last EDR Contact: 06/13/2022
Number of Days to Update: 0	Next Scheduled EDR Contact: 09/26/2022
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 04/21/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/07/2022
Date Data Arrived at EDR: 03/08/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 86

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/07/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 02/15/2022
Date Data Arrived at EDR: 02/24/2022
Date Made Active in Reports: 05/25/2022
Number of Days to Update: 90

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 08/22/2022
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/21/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2022
Date Data Arrived at EDR: 02/23/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/24/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/24/2022
Date Data Arrived at EDR: 01/25/2022
Date Made Active in Reports: 04/13/2022
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/26/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 01/18/2022	Source: CalEPA
Date Data Arrived at EDR: 01/19/2022	Telephone: 916-323-2514
Date Made Active in Reports: 04/11/2022	Last EDR Contact: 04/19/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2022	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 02/23/2022	Telephone: 202-307-1000
Date Made Active in Reports: 05/10/2022	Last EDR Contact: 05/24/2022
Number of Days to Update: 76	Next Scheduled EDR Contact: 09/05/2022
	Data Release Frequency: Quarterly

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 02/20/2020	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/10/2021	Telephone: 916-341-5455
Date Made Active in Reports: 02/25/2022	Last EDR Contact: 06/10/2022
Number of Days to Update: 77	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 03/07/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/08/2022	Telephone: 866-480-1028
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 06/07/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/07/2005	Telephone: N/A
Date Made Active in Reports: 08/11/2005	Last EDR Contact: 06/03/2005
Number of Days to Update: 35	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990	Source: State Water Resources Control Board
Date Data Arrived at EDR: 01/25/1991	Telephone: 916-341-5851
Date Made Active in Reports: 02/12/1991	Last EDR Contact: 07/26/2001
Number of Days to Update: 18	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 02/03/2022	Source: San Francisco County Department of Public Health
Date Data Arrived at EDR: 02/04/2022	Telephone: 415-252-3896
Date Made Active in Reports: 05/02/2022	Last EDR Contact: 04/28/2022
Number of Days to Update: 87	Next Scheduled EDR Contact: 08/15/2022
	Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 09/05/1995	Telephone: 916-341-5851
Date Made Active in Reports: 09/29/1995	Last EDR Contact: 12/28/1998
Number of Days to Update: 24	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 01/18/2022	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2022	Telephone: 916-323-2514
Date Made Active in Reports: 04/11/2022	Last EDR Contact: 04/19/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/24/2022	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 02/25/2022	Telephone: 916-323-3400
Date Made Active in Reports: 03/09/2022	Last EDR Contact: 05/25/2022
Number of Days to Update: 12	Next Scheduled EDR Contact: 09/12/2022
	Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/27/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/05/2022	Telephone: 202-564-6023
Date Made Active in Reports: 05/31/2022	Last EDR Contact: 06/01/2022
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/28/2022	Source: DTSC and SWRCB
Date Data Arrived at EDR: 02/28/2022	Telephone: 916-323-3400
Date Made Active in Reports: 05/25/2022	Last EDR Contact: 05/31/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/12/2022
	Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/21/2022	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 03/21/2022	Telephone: 202-366-4555
Date Made Active in Reports: 06/14/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2021	Source: Office of Emergency Services
Date Data Arrived at EDR: 01/19/2022	Telephone: 916-845-8400
Date Made Active in Reports: 04/08/2022	Last EDR Contact: 04/19/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/23/2022	Source: State Water Quality Control Board
Date Data Arrived at EDR: 05/23/2022	Telephone: 866-480-1028
Date Made Active in Reports: 05/24/2022	Last EDR Contact: 05/23/2022
Number of Days to Update: 1	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/23/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 05/23/2022	Telephone: 866-480-1028
Date Made Active in Reports: 05/24/2022	Last EDR Contact: 05/23/2022
Number of Days to Update: 1	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/22/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 50	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 02/28/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2022	Telephone: (415) 495-8895
Date Made Active in Reports: 03/17/2022	Last EDR Contact: 04/06/2022
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/01/2021	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 02/15/2022	Telephone: 202-528-4285
Date Made Active in Reports: 05/10/2022	Last EDR Contact: 05/17/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 08/29/2022
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021	Source: USGS
Date Data Arrived at EDR: 07/13/2021	Telephone: 888-275-8747
Date Made Active in Reports: 03/09/2022	Last EDR Contact: 04/12/2022
Number of Days to Update: 239	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018	Source: U.S. Geological Survey
Date Data Arrived at EDR: 04/11/2018	Telephone: 888-275-8747
Date Made Active in Reports: 11/06/2019	Last EDR Contact: 04/05/2022
Number of Days to Update: 574	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/06/2022
Next Scheduled EDR Contact: 08/22/2022
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/21/2022
Date Data Arrived at EDR: 03/21/2022
Date Made Active in Reports: 06/14/2022
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/21/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/06/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/14/2022
Next Scheduled EDR Contact: 09/26/2022
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/20/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/19/2022
Date Data Arrived at EDR: 01/19/2022
Date Made Active in Reports: 04/11/2022
Number of Days to Update: 82

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/20/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/05/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 26

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/01/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/04/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/18/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 01/25/2022	Source: EPA
Date Data Arrived at EDR: 02/03/2022	Telephone: 202-564-6023
Date Made Active in Reports: 02/25/2022	Last EDR Contact: 06/01/2022
Number of Days to Update: 22	Next Scheduled EDR Contact: 08/15/2022
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2022	Source: EPA
Date Data Arrived at EDR: 01/20/2022	Telephone: 202-566-0500
Date Made Active in Reports: 03/25/2022	Last EDR Contact: 04/08/2022
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 03/31/2022
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/11/2022	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 03/15/2022	Telephone: 301-415-7169
Date Made Active in Reports: 06/14/2022	Last EDR Contact: 04/18/2022
Number of Days to Update: 91	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020	Source: Department of Energy
Date Data Arrived at EDR: 11/30/2021	Telephone: 202-586-8719
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 06/02/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 09/12/2022
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/05/2019	Telephone: N/A
Date Made Active in Reports: 11/11/2019	Last EDR Contact: 05/25/2022
Number of Days to Update: 251	Next Scheduled EDR Contact: 09/12/2022
	Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/06/2019	Telephone: 202-566-0517
Date Made Active in Reports: 02/10/2020	Last EDR Contact: 05/06/2022
Number of Days to Update: 96	Next Scheduled EDR Contact: 08/15/2022
	Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2019	Telephone: 202-343-9775
Date Made Active in Reports: 09/23/2019	Last EDR Contact: 03/28/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transportation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/26/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 70

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 03/02/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 23

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/02/2022
Next Scheduled EDR Contact: 07/04/2022
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/05/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/16/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/05/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/01/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/01/2022
Date Data Arrived at EDR: 02/23/2022
Date Made Active in Reports: 05/24/2022
Number of Days to Update: 90

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/21/2022
Date Data Arrived at EDR: 03/22/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 3

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 05/26/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/10/2022
Date Data Arrived at EDR: 03/10/2022
Date Made Active in Reports: 06/14/2022
Number of Days to Update: 96

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/14/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/13/2022
Date Data Arrived at EDR: 05/18/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 13

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 05/18/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2020	Source: Department of Defense
Date Data Arrived at EDR: 01/11/2022	Telephone: 703-704-1564
Date Made Active in Reports: 02/14/2022	Last EDR Contact: 04/12/2022
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/01/2022	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/04/2022	Telephone: 202-564-2280
Date Made Active in Reports: 01/10/2022	Last EDR Contact: 04/05/2022
Number of Days to Update: 6	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/17/2022	Source: EPA
Date Data Arrived at EDR: 02/17/2022	Telephone: 800-385-6164
Date Made Active in Reports: 05/10/2022	Last EDR Contact: 05/17/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 08/29/2022
	Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/21/2022	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 03/21/2022	Telephone: 916-323-3400
Date Made Active in Reports: 06/14/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 12/07/2021	Source: Livermore-Pleasanton Fire Department
Date Data Arrived at EDR: 05/09/2022	Telephone: 925-454-2361
Date Made Active in Reports: 05/17/2022	Last EDR Contact: 05/09/2022
Number of Days to Update: 8	Next Scheduled EDR Contact: 08/22/2022
	Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/24/2022
Date Data Arrived at EDR: 02/25/2022
Date Made Active in Reports: 05/18/2022
Number of Days to Update: 82

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 02/17/2022
Date Data Arrived at EDR: 02/24/2022
Date Made Active in Reports: 05/18/2022
Number of Days to Update: 83

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/27/2021
Date Data Arrived at EDR: 09/01/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 79

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/01/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/13/2022
Next Scheduled EDR Contact: 09/26/2022
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/12/2022
Date Data Arrived at EDR: 04/19/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 42

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/19/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/13/2022
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 02/24/2022
Date Made Active in Reports: 05/18/2022
Number of Days to Update: 83

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 08/22/2022
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/08/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/14/2022
Date Data Arrived at EDR: 02/15/2022
Date Made Active in Reports: 05/12/2022
Number of Days to Update: 86

Source: Department of Toxic Substances Control
Telephone: 877-786-9427
Last EDR Contact: 05/17/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSTITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/14/2022
Date Data Arrived at EDR: 02/15/2022
Date Made Active in Reports: 05/12/2022
Number of Days to Update: 86

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/17/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 01/04/2022
Date Made Active in Reports: 03/18/2022
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/05/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/07/2022	Source: Department of Conservation
Date Data Arrived at EDR: 03/08/2022	Telephone: 916-322-1080
Date Made Active in Reports: 06/01/2022	Last EDR Contact: 06/07/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/17/2022	Source: Department of Public Health
Date Data Arrived at EDR: 02/28/2022	Telephone: 916-558-1784
Date Made Active in Reports: 05/25/2022	Last EDR Contact: 05/31/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/12/2022
	Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/07/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 02/08/2022	Telephone: 916-445-9379
Date Made Active in Reports: 05/05/2022	Last EDR Contact: 05/09/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 08/22/2022
	Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 02/28/2022	Source: Department of Pesticide Regulation
Date Data Arrived at EDR: 02/28/2022	Telephone: 916-445-4038
Date Made Active in Reports: 05/25/2022	Last EDR Contact: 05/31/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/12/2022
	Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 03/07/2022	Source: Department of Conservation
Date Data Arrived at EDR: 03/08/2022	Telephone: 916-323-3836
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 06/07/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/11/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/15/2022	Telephone: 916-445-3846
Date Made Active in Reports: 06/08/2022	Last EDR Contact: 06/09/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 09/26/2022
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/07/2022	Source: Department of Conservation
Date Data Arrived at EDR: 03/08/2022	Telephone: 916-445-2408
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 06/07/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)

Underground control injection sites

Date of Government Version: 05/23/2022	Source: State Water Resource Control Board
Date Data Arrived at EDR: 05/23/2022	Telephone: 866-480-1028
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 05/23/2022
Number of Days to Update: 10	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021	Source: RWQCB, Central Valley Region
Date Data Arrived at EDR: 07/01/2021	Telephone: 559-445-5577
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 04/08/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 05/12/2022
Number of Days to Update: 9	Next Scheduled EDR Contact: 08/29/2022
	Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 06/14/2022
Number of Days to Update: 13	Next Scheduled EDR Contact: 10/03/2022
	Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 05/23/2022	Source: State Water Resources Control Board
Date Data Arrived at EDR: 05/23/2022	Telephone: 866-480-1028
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 05/23/2022
Number of Days to Update: 10	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 10

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 03/07/2022
Date Data Arrived at EDR: 03/08/2022
Date Made Active in Reports: 06/03/2022
Number of Days to Update: 87

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/07/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 02/28/2022
Date Data Arrived at EDR: 02/28/2022
Date Made Active in Reports: 05/25/2022
Number of Days to Update: 86

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 05/31/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 01/18/2022
Date Data Arrived at EDR: 01/19/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 79

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/19/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 10

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 10

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 10

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 10

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 05/23/2022
Date Data Arrived at EDR: 05/23/2022
Date Made Active in Reports: 06/02/2022
Number of Days to Update: 10

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/23/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

MINES MRDS: Mineral Resources Data System Mineral Resources Data System

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/27/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/05/2022
Date Data Arrived at EDR: 04/05/2022
Date Made Active in Reports: 04/26/2022
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 04/05/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 12/28/2021
Date Data Arrived at EDR: 12/28/2021
Date Made Active in Reports: 03/18/2022
Number of Days to Update: 80

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA AMADOR: CUPA Facility List Cupa Facility List

Date of Government Version: 02/04/2022
Date Data Arrived at EDR: 02/04/2022
Date Made Active in Reports: 05/02/2022
Number of Days to Update: 87

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing Cupa Facility Listing

Date of Government Version: 03/17/2022
Date Data Arrived at EDR: 03/18/2022
Date Made Active in Reports: 06/08/2022
Number of Days to Update: 82

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/14/2022
Next Scheduled EDR Contact: 10/03/2022
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 01/24/2022
Date Data Arrived at EDR: 01/25/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 79

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/21/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA DEL NORTE: CUPA Facility List Cupa Facility list

Date of Government Version: 01/10/2022
Date Data Arrived at EDR: 01/26/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 78

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 05/04/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List CUPA facility list.

Date of Government Version: 02/16/2022
Date Data Arrived at EDR: 02/17/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 82

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 06/14/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/31/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA IMPERIAL: CUPA Facility List

Cupa facility list.

Date of Government Version: 01/13/2022
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 04/06/2022
Number of Days to Update: 82

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/18/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List

Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List

A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 02/10/2022
Date Data Arrived at EDR: 02/11/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 82

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 02/10/2022
Date Data Arrived at EDR: 02/11/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 82

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

LAKE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA LAKE: CUPA Facility List Cupa facility list

Date of Government Version: 02/10/2022	Source: Lake County Environmental Health
Date Data Arrived at EDR: 02/11/2022	Telephone: 707-263-1164
Date Made Active in Reports: 05/04/2022	Last EDR Contact: 04/11/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List Cupa facility list

Date of Government Version: 07/31/2020	Source: Lassen County Environmental Health
Date Data Arrived at EDR: 08/21/2020	Telephone: 530-251-8528
Date Made Active in Reports: 11/09/2020	Last EDR Contact: 04/14/2022
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009	Source: N/A
Date Data Arrived at EDR: 03/31/2009	Telephone: N/A
Date Made Active in Reports: 10/23/2009	Last EDR Contact: 06/09/2022
Number of Days to Update: 206	Next Scheduled EDR Contact: 09/26/2022
	Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/04/2022	Source: Department of Public Works
Date Data Arrived at EDR: 04/05/2022	Telephone: 626-458-3517
Date Made Active in Reports: 04/13/2022	Last EDR Contact: 04/04/2022
Number of Days to Update: 8	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/10/2022	Source: La County Department of Public Works
Date Data Arrived at EDR: 01/11/2022	Telephone: 818-458-5185
Date Made Active in Reports: 04/04/2022	Last EDR Contact: 04/12/2022
Number of Days to Update: 83	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2022	Source: Engineering & Construction Division
Date Data Arrived at EDR: 01/21/2022	Telephone: 213-473-7869
Date Made Active in Reports: 04/11/2022	Last EDR Contact: 04/08/2022
Number of Days to Update: 80	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES AST: Active & Inactive AST Inventory

A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 06/25/2019	Telephone: 213-978-3800
Date Made Active in Reports: 08/22/2019	Last EDR Contact: 06/14/2022
Number of Days to Update: 58	Next Scheduled EDR Contact: 10/03/2022
	Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 01/10/2022	Source: Los Angeles County Department of Public Works
Date Data Arrived at EDR: 01/12/2022	Telephone: 626-458-6973
Date Made Active in Reports: 04/04/2022	Last EDR Contact: 04/13/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 01/13/2022	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 03/21/2022	Telephone: 213-978-3800
Date Made Active in Reports: 06/15/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 01/13/2022	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 03/21/2022	Telephone: 213-978-3800
Date Made Active in Reports: 06/15/2022	Last EDR Contact: 03/21/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 07/04/2022
	Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/26/2021	Source: Community Health Services
Date Data Arrived at EDR: 07/09/2021	Telephone: 323-890-7806
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 04/14/2022
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 04/19/2017	Telephone: 310-524-2236
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 04/08/2022
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/25/2022
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 04/23/2019	Telephone: 562-570-2563
Date Made Active in Reports: 06/27/2019	Last EDR Contact: 04/14/2022
Number of Days to Update: 65	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/02/2021	Source: City of Torrance Fire Department
Date Data Arrived at EDR: 04/28/2021	Telephone: 310-618-2973
Date Made Active in Reports: 07/13/2021	Last EDR Contact: 04/18/2022
Number of Days to Update: 76	Next Scheduled EDR Contact: 08/01/2022
	Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020	Source: Madera County Environmental Health
Date Data Arrived at EDR: 08/12/2020	Telephone: 559-675-7823
Date Made Active in Reports: 10/23/2020	Last EDR Contact: 05/12/2022
Number of Days to Update: 72	Next Scheduled EDR Contact: 08/29/2022
	Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018	Source: Public Works Department Waste Management
Date Data Arrived at EDR: 10/04/2018	Telephone: 415-473-6647
Date Made Active in Reports: 11/02/2018	Last EDR Contact: 03/23/2022
Number of Days to Update: 29	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021	Source: Department of Public Health
Date Data Arrived at EDR: 11/18/2021	Telephone: 707-463-4466
Date Made Active in Reports: 11/22/2021	Last EDR Contact: 05/19/2022
Number of Days to Update: 4	Next Scheduled EDR Contact: 09/05/2022
	Data Release Frequency: Annually

MERCED COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA MERCED: CUPA Facility List CUPA facility list.

Date of Government Version: 02/15/2022
Date Data Arrived at EDR: 02/17/2022
Date Made Active in Reports: 05/11/2022
Number of Days to Update: 83

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 06/09/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 04/04/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/19/2022
Next Scheduled EDR Contact: 09/05/2022
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List CUPA facility list.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/25/2022
Date Data Arrived at EDR: 01/26/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 78

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 04/21/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 01/14/2022
Date Data Arrived at EDR: 02/03/2022
Date Made Active in Reports: 04/14/2022
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/02/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 01/14/2022
Date Data Arrived at EDR: 02/04/2022
Date Made Active in Reports: 05/02/2022
Number of Days to Update: 87

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/02/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/14/2022
Date Data Arrived at EDR: 02/01/2022
Date Made Active in Reports: 04/18/2022
Number of Days to Update: 76

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/03/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/25/2022
Date Data Arrived at EDR: 05/26/2022
Date Made Active in Reports: 06/01/2022
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

RIVERSIDE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/31/2022	Source: Department of Environmental Health
Date Data Arrived at EDR: 03/31/2022	Telephone: 951-358-5055
Date Made Active in Reports: 04/08/2022	Last EDR Contact: 06/09/2022
Number of Days to Update: 8	Next Scheduled EDR Contact: 09/26/2022
	Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 03/31/2022	Source: Department of Environmental Health
Date Data Arrived at EDR: 03/31/2022	Telephone: 951-358-5055
Date Made Active in Reports: 04/08/2022	Last EDR Contact: 06/09/2022
Number of Days to Update: 8	Next Scheduled EDR Contact: 09/26/2022
	Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 06/18/2021	Source: Sacramento County Environmental Management
Date Data Arrived at EDR: 09/28/2021	Telephone: 916-875-8406
Date Made Active in Reports: 12/14/2021	Last EDR Contact: 03/31/2022
Number of Days to Update: 77	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2021	Source: Sacramento County Environmental Management
Date Data Arrived at EDR: 08/04/2021	Telephone: 916-875-8406
Date Made Active in Reports: 11/02/2021	Last EDR Contact: 03/31/2022
Number of Days to Update: 90	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 04/29/2022	Source: San Benito County Environmental Health
Date Data Arrived at EDR: 04/29/2022	Telephone: N/A
Date Made Active in Reports: 05/05/2022	Last EDR Contact: 04/28/2022
Number of Days to Update: 6	Next Scheduled EDR Contact: 08/15/2022
	Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/12/2022
Date Data Arrived at EDR: 05/12/2022
Date Made Active in Reports: 05/18/2022
Number of Days to Update: 6

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 02/28/2022
Date Data Arrived at EDR: 02/28/2022
Date Made Active in Reports: 05/25/2022
Number of Days to Update: 86

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 05/31/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/27/2021
Date Data Arrived at EDR: 03/04/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 88

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/18/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/03/2022
Date Data Arrived at EDR: 02/04/2022
Date Made Active in Reports: 02/11/2022
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 02/03/2022
Date Data Arrived at EDR: 02/04/2022
Date Made Active in Reports: 05/02/2022
Number of Days to Update: 87

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Quarterly

SAN FRANCISCO COUNTY:

SAN FRANCISCO MAHER: Maher Ordinance Property Listing

a listing of properties that fall within a Maher Ordinance, for all of San Francisco

Date of Government Version: 01/18/2022
Date Data Arrived at EDR: 01/20/2022
Date Made Active in Reports: 04/27/2022
Number of Days to Update: 97

Source: San Francisco Planning
Telephone: 628-652-7483
Last EDR Contact: 05/06/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/09/2022
Next Scheduled EDR Contact: 09/26/2022
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List Cupa Facility List.

Date of Government Version: 02/15/2022
Date Data Arrived at EDR: 02/16/2022
Date Made Active in Reports: 05/13/2022
Number of Days to Update: 86

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

SAN MATEO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BI SAN MATEO: Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 02/20/2020	Telephone: 650-363-1921
Date Made Active in Reports: 04/24/2020	Last EDR Contact: 06/10/2022
Number of Days to Update: 64	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 03/29/2019	Telephone: 650-363-1921
Date Made Active in Reports: 05/29/2019	Last EDR Contact: 06/02/2022
Number of Days to Update: 61	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011	Source: Santa Barbara County Public Health Department
Date Data Arrived at EDR: 09/09/2011	Telephone: 805-686-8167
Date Made Active in Reports: 10/07/2011	Last EDR Contact: 05/12/2022
Number of Days to Update: 28	Next Scheduled EDR Contact: 08/29/2022
	Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List

Cupa facility list

Date of Government Version: 02/14/2022	Source: Department of Environmental Health
Date Data Arrived at EDR: 02/16/2022	Telephone: 408-918-1973
Date Made Active in Reports: 05/12/2022	Last EDR Contact: 05/12/2022
Number of Days to Update: 85	Next Scheduled EDR Contact: 08/29/2022
	Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005	Source: Santa Clara Valley Water District
Date Data Arrived at EDR: 03/30/2005	Telephone: 408-265-2600
Date Made Active in Reports: 04/21/2005	Last EDR Contact: 03/23/2009
Number of Days to Update: 22	Next Scheduled EDR Contact: 06/22/2009
	Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014	Source: Department of Environmental Health
Date Data Arrived at EDR: 03/05/2014	Telephone: 408-918-3417
Date Made Active in Reports: 03/18/2014	Last EDR Contact: 05/19/2022
Number of Days to Update: 13	Next Scheduled EDR Contact: 09/05/2022
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SAN JOSE HAZMAT: Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List

CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List

Cupa Facility list

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/14/2022
Next Scheduled EDR Contact: 10/03/2022
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/14/2022
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List Cupa facility list

Date of Government Version: 02/08/2022
Date Data Arrived at EDR: 02/10/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Environmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/11/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks Underground storage tank sites located in Sutter county.

Date of Government Version: 11/23/2021
Date Data Arrived at EDR: 11/29/2021
Date Made Active in Reports: 02/11/2022
Number of Days to Update: 74

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 05/25/2022
Next Scheduled EDR Contact: 09/12/2022
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List Cupa facility list

Date of Government Version: 01/13/2022
Date Data Arrived at EDR: 01/14/2022
Date Made Active in Reports: 04/06/2022
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/18/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

TULARE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA TULARE: CUPA Facility List Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/15/2022
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Division of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/14/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/27/2021
Date Data Arrived at EDR: 01/20/2022
Date Made Active in Reports: 04/08/2022
Number of Days to Update: 78

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/18/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/23/2022
Next Scheduled EDR Contact: 07/11/2022
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/04/2022
Next Scheduled EDR Contact: 08/22/2022
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/27/2021
Date Data Arrived at EDR: 01/20/2022
Date Made Active in Reports: 04/11/2022
Number of Days to Update: 81

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/18/2022
Next Scheduled EDR Contact: 08/01/2022
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST VENTURA: Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/28/2022	Source: Environmental Health Division
Date Data Arrived at EDR: 03/08/2022	Telephone: 805-654-2813
Date Made Active in Reports: 06/02/2022	Last EDR Contact: 06/07/2022
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/19/2022
	Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/27/2021	Source: Yolo County Department of Health
Date Data Arrived at EDR: 01/04/2022	Telephone: 530-666-8646
Date Made Active in Reports: 03/18/2022	Last EDR Contact: 03/24/2022
Number of Days to Update: 73	Next Scheduled EDR Contact: 07/11/2022
	Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 01/26/2022	Source: Yuba County Environmental Health Department
Date Data Arrived at EDR: 01/27/2022	Telephone: 530-749-7523
Date Made Active in Reports: 04/14/2022	Last EDR Contact: 04/21/2022
Number of Days to Update: 77	Next Scheduled EDR Contact: 08/08/2022
	Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/03/2021	Source: Department of Energy & Environmental Protection
Date Data Arrived at EDR: 02/11/2022	Telephone: 860-424-3375
Date Made Active in Reports: 05/06/2022	Last EDR Contact: 05/09/2022
Number of Days to Update: 84	Next Scheduled EDR Contact: 08/22/2022
	Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018	Source: Department of Environmental Protection
Date Data Arrived at EDR: 04/10/2019	Telephone: N/A
Date Made Active in Reports: 05/16/2019	Last EDR Contact: 04/07/2022
Number of Days to Update: 36	Next Scheduled EDR Contact: 07/18/2022
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/28/2022
Next Scheduled EDR Contact: 08/08/2022
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/08/2022
Next Scheduled EDR Contact: 07/25/2022
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/16/2022
Next Scheduled EDR Contact: 08/29/2022
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/03/2022
Next Scheduled EDR Contact: 09/19/2022
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data

Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Department of Fish and Wildlife

Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

NORTHSTAR 2 SOLAR
HWY 78 AND EHL CANAL
BRAWLEY, CA 92227

TARGET PROPERTY COORDINATES

Latitude (North): 32.977908 - 32° 58' 40.47"
Longitude (West): 115.27213 - 115° 16' 19.67"
Universal Transverse Mercator: Zone 11
UTM X (Meters): 661464.2
UTM Y (Meters): 3649972.2
Elevation: 65 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map: 12008834 HOLTVILLE NE, CA
Version Date: 2018

North Map: 11994350 AMOS, CA
Version Date: 2018

Northeast Map: 11994348 ACOLITA, CA
Version Date: 2018

Southeast Map: 12008826 GLAMIS NW, CA
Version Date: 2018

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

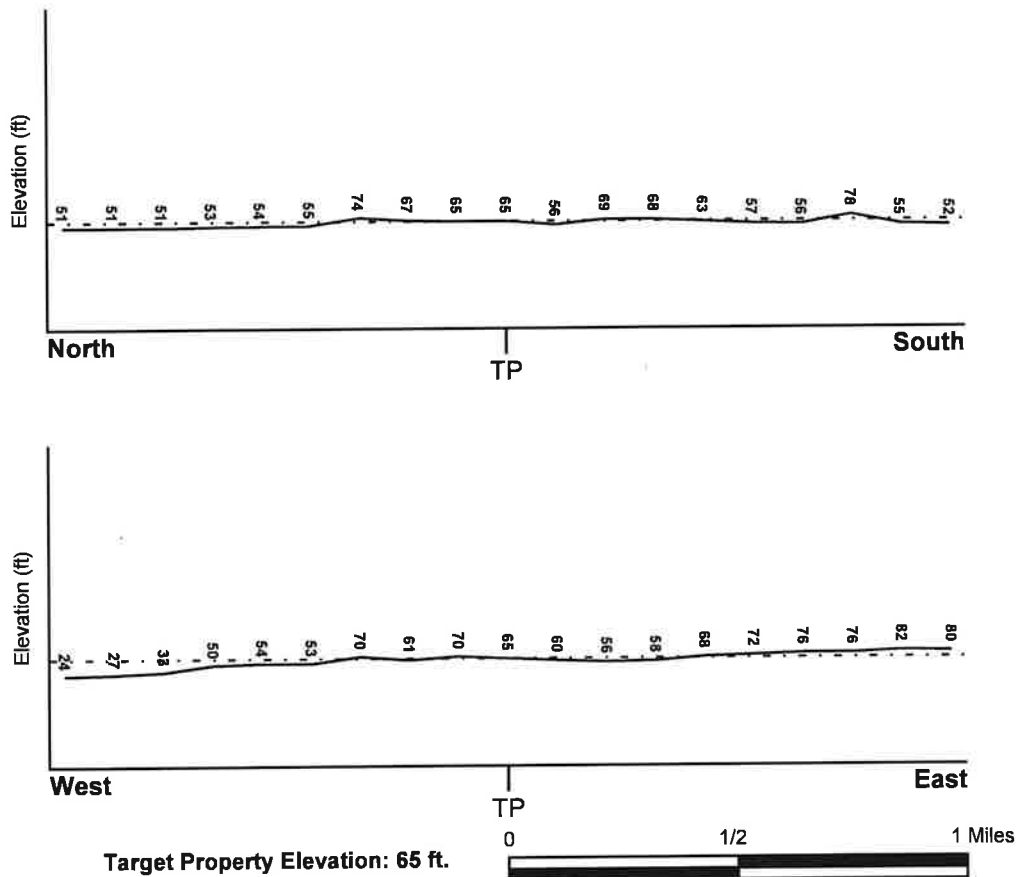
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ESE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
06025C1425C	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
Not Reported	

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
HOLTVILLE NE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:
 Search Radius: 1.25 miles
 Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

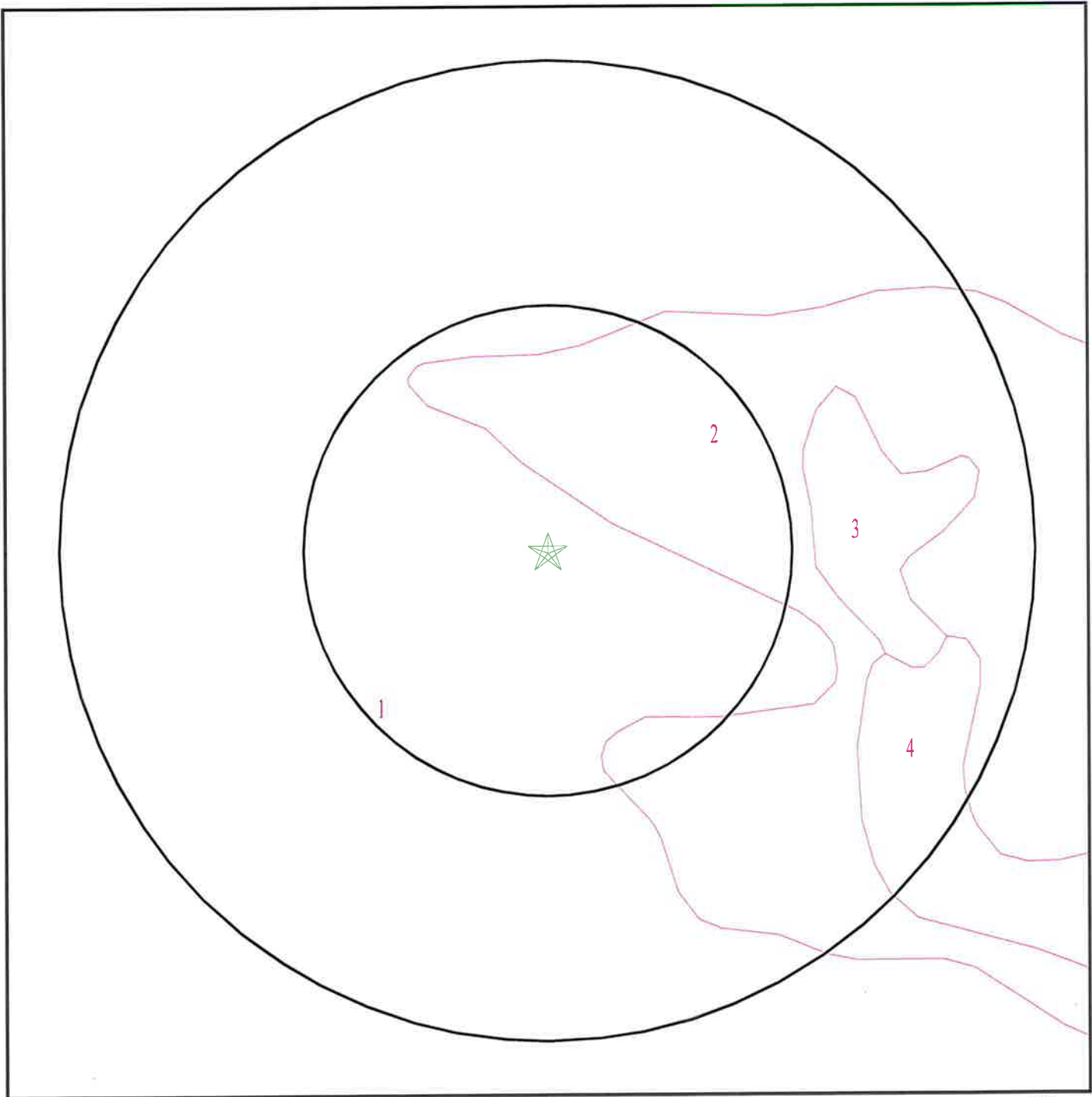
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q <i>(decoded above as Era, System & Series)</i>

GEOLOGIC AGE IDENTIFICATION

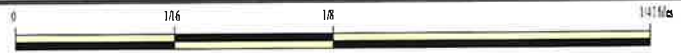
Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7022956.2s



- ★ Target Property
- ∕ SSURGO Soil
- ∕ Water



SITE NAME: NorthStar 2 Solar
ADDRESS: Hwy 78 and EHL Canal
Brawley CA 92227
LAT/LONG: 32.977908 / 115.27213

CLIENT: GS Lyon Consultants
CONTACT: Steven Williams
INQUIRY #: 7022956.2s
DATE: June 17, 2022 1:33 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Rositas

Soil Surface Texture: fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
2	9 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: Rositas

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	3 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
2	3 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Holtville

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	14 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.4
2	14 inches	22 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.4
3	22 inches	59 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.4

Soil Map ID: 4

Soil Component Name: Antho

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9
2	12 inches	59 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

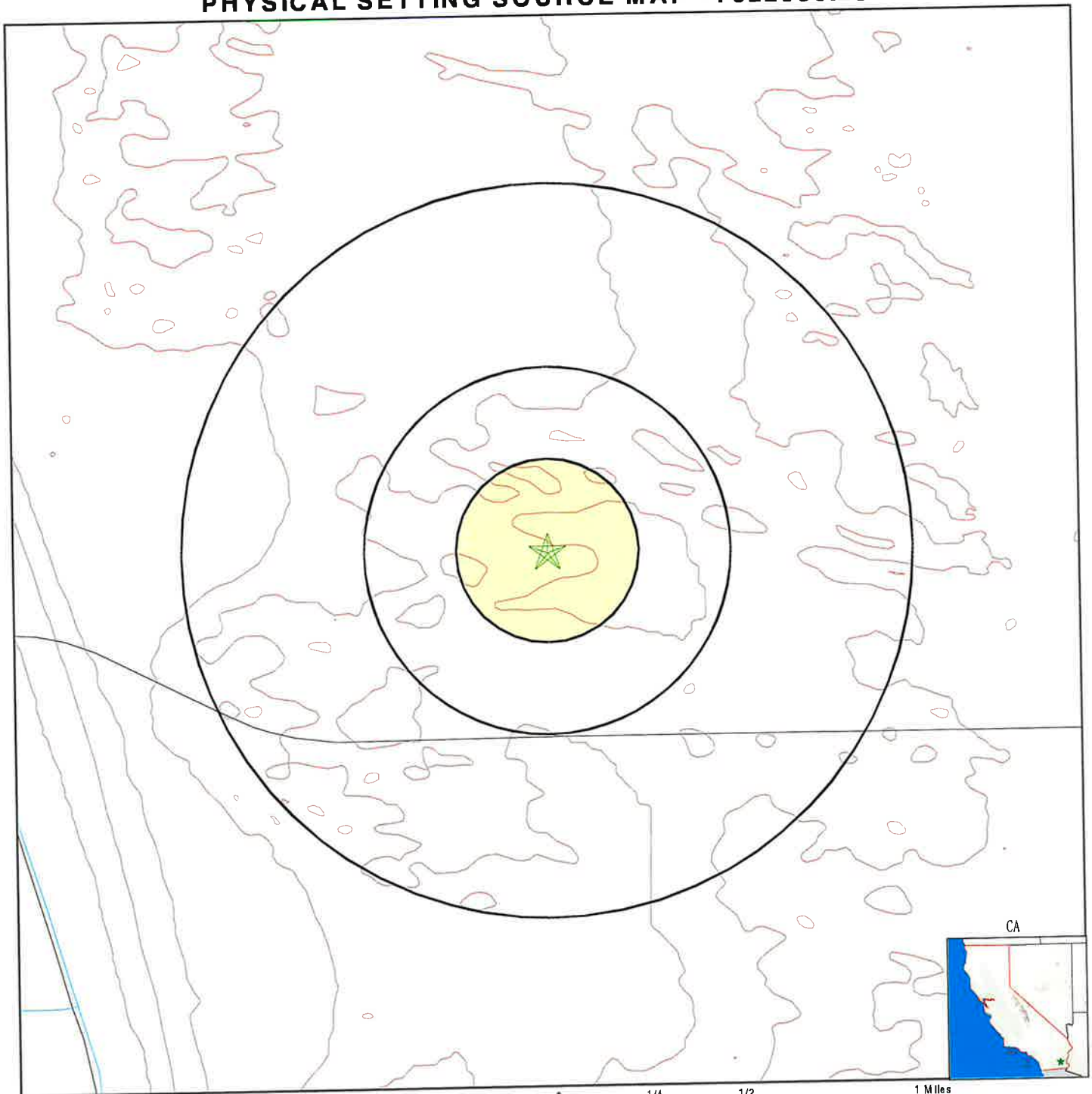
MAP ID

No Wells Found

WELL ID

LOCATION
FROM TP

PHYSICAL SETTING SOURCE MAP - 7022956.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: NorthStar 2 Solar
 ADDRESS: Hwy 78 and EHL Canal
 Brawley CA 92227
 LAT/LONG: 32.977908 / 115.27213

CLIENT: GS Lyon Consultants
 CONTACT: Steven Williams
 INQUIRY #: 7022956.2s
 DATE: June 17, 2022 1:33 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92227	4	0

Federal EPA Radon Zone for IMPERIAL County: 3

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 92227

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.450 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Department of Fish and Wildlife

Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program

State Water Resources Control Board

Telephone: 916-341-5577

The GAMA Program is California's comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Health Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

California Drinking Water Quality Database

Source: Department of Public Health

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations

Source: Dept of Conservation, Geologic Energy Management Division

Telephone: 916-323-1779

Oil and Gas well locations in the state.

California Earthquake Fault Lines

Source: California Division of Mines and Geology

The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon

Source: Department of Public Health

Telephone: 916-210-8558

Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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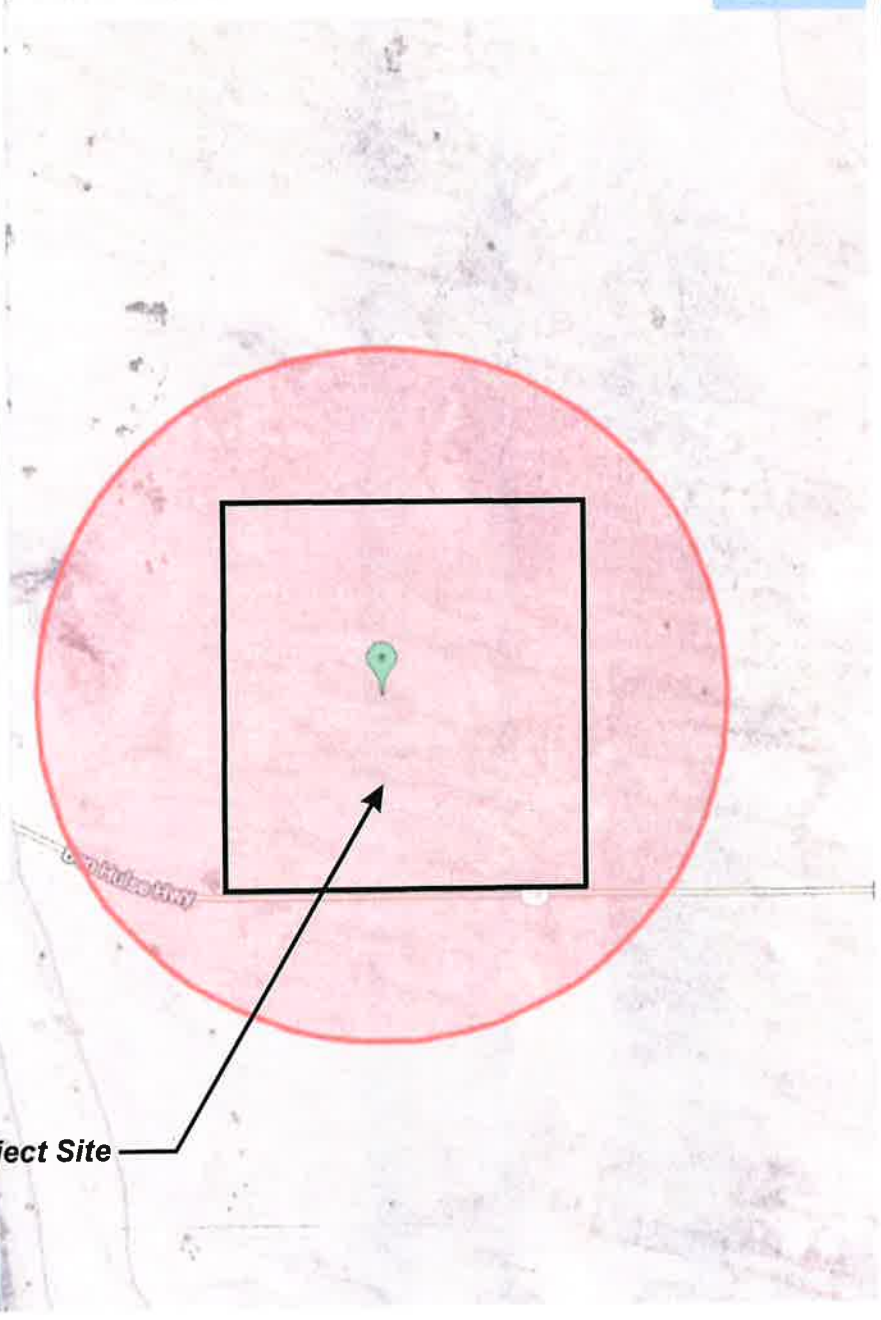
APPENDIX G

ENVIROSTOR

Map Address

- Sites and Facilities
 - Cleanup Sites
 - Federal Superfund
 - State Response
 - Voluntary Cleanup
 - School Cleanup
 - Evaluation
 - School Investigation
 - Military Evaluation
 - Tiered Permit
 - Corrective Action
 - Field Points
 - Permitted Sites
 - Operating
 - Post-Closure
 - Non-Operating
 - Other Sites
 - GIS Layers
 - Tools

TAKE A TOUR



Subject Site

Map data © 2022 Imagery © 2022 CNES | Airbus | Airbus | Copernicus, Maxar Technologies | US Geological Survey | 500 m | U.S.D.A. EPA/CDC

0 SITES LISTED

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
--------------	--------	--------------	---------	------

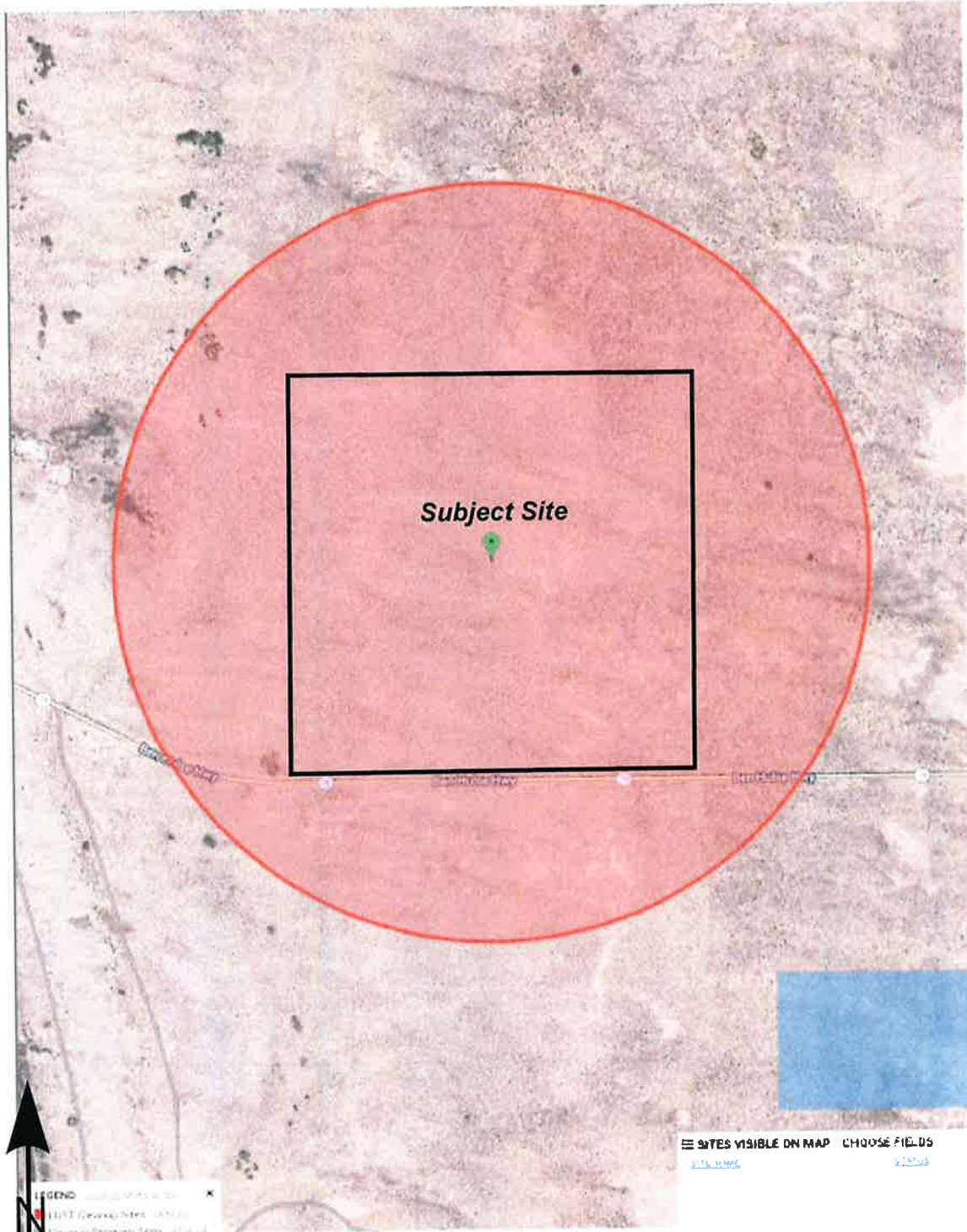
[EXPORT THIS LIST](#)

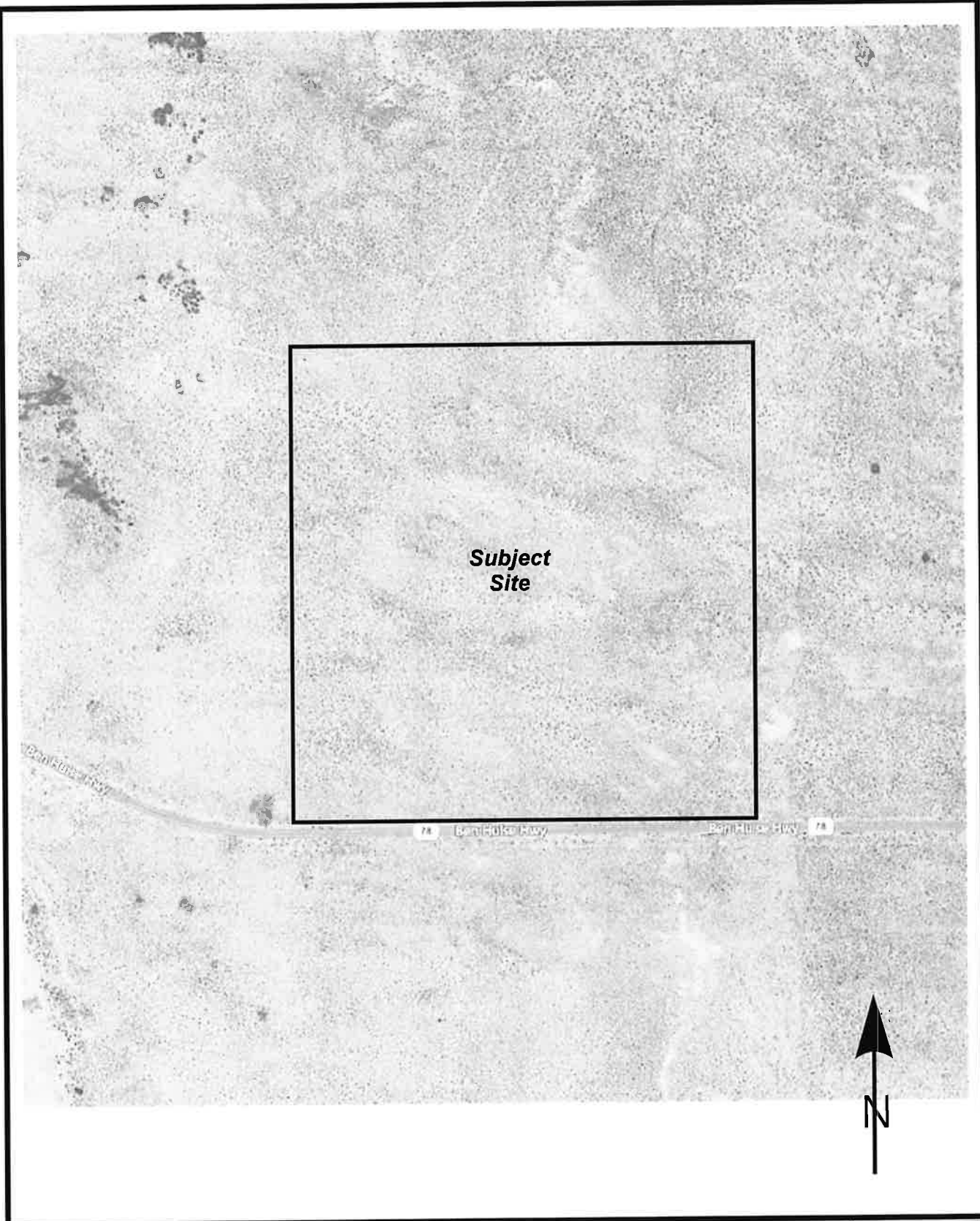


Project No.: GS2220

Envirostor Map

Plate
5





GS Lyon

Project No.: GS2220

CalEPA Map

Plate
7

APPENDIX H

NorthStar 2 Solar

Hwy 78 and EHL Canal
Brawley, CA 92227

Inquiry Number: 7022956.5

June 17, 2022

The EDR-City Directory Image Report

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by

infoUSA[®]

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2017	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EDR Digital Archive
2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EDR Digital Archive
2010	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EDR Digital Archive
2005	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EDR Digital Archive
1995	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EDR Digital Archive
1992	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1987	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1982	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1977	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1972	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1967	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1963	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO
1959	<input type="checkbox"/>	<input type="checkbox"/>	POLK DIRECTORY CO

FINDINGS

TARGET PROPERTY STREET

Hwy 78 and EHL Canal
Brawley, CA 92227

No Addresses Found

FINDINGS

CROSS STREETS

<u>Year</u>	<u>CD Image</u>	<u>Source</u>	
<u>E US HIGHWAY 78</u>			
2017	pg. A1	EDR Digital Archive	
2014	pg. A2	EDR Digital Archive	
2010	pg. A3	EDR Digital Archive	
2005	pg. A4	EDR Digital Archive	
1995	pg. A5	EDR Digital Archive	
1992	-	POLK DIRECTORY CO	Street not listed in Source
1987	-	POLK DIRECTORY CO	Street not listed in Source
1982	-	POLK DIRECTORY CO	Street not listed in Source
1977	-	POLK DIRECTORY CO	Street not listed in Source
1972	-	POLK DIRECTORY CO	Street not listed in Source
1967	-	POLK DIRECTORY CO	Street not listed in Source
1963	-	POLK DIRECTORY CO	Street not listed in Source
1959	-	POLK DIRECTORY CO	Street not listed in Source

City Directory Images

Target Street

Cross Street

Source

EDR Digital Archive

E US HIGHWAY 78

2017

2802 INGRAM, KAY

Target Street

Cross Street

Source

EDR Digital Archive

✓

E US HIGHWAY 78

2014

2802 OCCUPANT UNKNOWN,
5781 OCCUPANT UNKNOWN,

Target Street

Cross Street

Source

EDR Digital Archive

E US HIGHWAY 78

2010

2802	OCCUPANT UNKNOWN,
5775	GLAMIS BEACH STORE
5779	LEBLANC, EUGENE L
5781	OCCUPANT UNKNOWN,

Target Street

Cross Street

Source

EDR Digital Archive

-

✓

E US HIGHWAY 78

2005

2802	INGRAM, CRYSTAL K
5775	GLAMIS BEACH STORE
5779	LEBLANC, EUGENE L
5781	OCCUPANT UNKNOWN,

Target Street

Cross Street

Source

EDR Digital Archive

-

✓

E US HIGHWAY 78

1995

5778 CLEAN GENES BUGGY SHOP
6502 GOLD FIELDS OPERATING CO

APPENDIX I



NorthStar 2 Solar

Hwy 78 and EHL Canal
Brawley, CA 92227

Inquiry Number: 7022956.7

June 21, 2022

EDR Environmental Lien and AUL Search

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

Hwy 78 and EHL Canal
North Star 2 Solar
Brawley, CA 92227

ENVIRONMENTAL LIEN

Environmental Lien: Found Not Found

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found Not Found

RESEARCH SOURCE

Source 1:

Imperial Recorder
Imperial, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	Apex Energy Solutions LLC
Title received from:	Breckenridge LLC James J & Jean Pagliuso
Deed Dated	11/30/2021
Deed Recorded:	12/1/2021
Book:	NA
Page:	na
Volume:	na
Instrument	na
Docket	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	Apex Energy Solutions LLC
Parcel # / Property Identifier:	039-140-013, 039-140-014
Comments:	See Exhibit

Deed Exhibit 1

CHUCK STOREY

COUNTY CLERK/RECORDER

STC STEWART TITLE COMPANY

Recording Requested by (name):

Stewart Title of California

When recorded mail to and mail tax statements to:

Apex Energy Solutions

604 Sutter St., Ste. 250

Folsom, CA 95630

1193541

Doc#: **2021030854**



* \$ R 0 0 0 0 4 6 2 1 9 0 \$ *

Titles: 1 Pages: 13

Fees 60.00

Taxes 570.90

Other 0.00

PAID 630.90

Recorder's Use Only

Grant Deed

Title of Document

Commencing January 1, 2018, and except as provided in paragraph (2) GC 27388.1, in addition to any other recording fees specified in this code, a fee of seventy-five dollars (\$75) shall be paid at the time of recording of every real estate instrument, paper, or notice required or permitted by law to be recorded, except those expressly exempted from payment of recording fees, per each single transaction per parcel of real property. The fee imposed by this section shall not exceed two hundred twenty-five dollars (\$225). "Real estate instrument, paper, or notice" means a document relating to real property, including, but not limited to, the following: deed, grant deed, trustee's deed, deed of trust, reconveyance, quit claim deed, fictitious deed of trust, assignment of deed of trust, request for notice of default, abstract of judgment, subordination agreement, declaration of homestead, abandonment of homestead, notice of default, release or discharge, easement, notice of trustee sale, notice of completion, UCC financing statement, mechanic's lien, maps, and covenants, conditions, and restrictions. Pursuant to GC section 27388.1 (2) the fee described in paragraph (1) shall not be imposed on any of the following documents:

Reason for Exemption:

- Any real estate instrument, paper, or notice recorded in connection with a transfer subject to the imposition of a documentary transfer tax as defined in Section 11911 of the Revenue and Taxation Code.
- Any real estate instrument, paper, or notice recorded in connection with a transfer of real property that is a residential dwelling to an owner-occupier.
- Any real estate instrument, paper, or notice executed or recorded by the federal government in accordance with the Uniform Federal Lien Registration Act (Title 7(commencing with Section 2100) of Part 4 of the Code of Civil Procedure).
- Any real estate instrument, paper, or notice executed or recorded by the state or any county, municipality, or other political subdivision of the state.
- Exempt from fee per GC 27388.1 (a) (1); fee cap of \$225.00 reached.
- Exempt from fee per GC 27388.1 (a) (1); not related to real property.

I hereby declare under Penalty of Perjury that the information provided above is true and correct.

Executed this 30th day of November, 2021 at Riverside, CA

Theresa Alonzo
PRINT NAME

Theresa Alonzo
SIGNATURE

COMPLETE Documentary Transfer Tax Declaration ONLY when document is transferring title.

Documentary Transfer Tax: \$ 570.90 If exempt, enter R&T code: _____

- Computed on full value of the property conveyed.
- Computed on full value less liens & encumbrances remaining thereon at time of sale.
- Unincorporated Area City of Imperial

Theresa Alonzo
Signature of declarant or agent determining tax

MAIL TAX STATEMENTS AS DIRECTED ABOVE OR TO: _____
(IF DIFFERENT FROM ABOVE)

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions
604 Sutter St. Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502
TITLE ORDER NO.: 1193541
ESCROW NO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the **DOCUMENTARY TRANSFER TAX IS: \$ 570.90**

Unincorporated area City of IMPERIAL COUNTY
 computed on the full value of the interest of property conveyed, or
 computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
 OR transfer is EXEMPT from tax for the following reason:

The Undersigned
Signature of declarant or agent determining tax Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

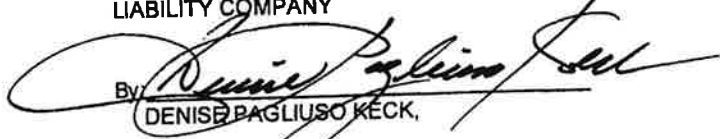
HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as:
Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof.
Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records.
APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

*This Deed is signed in
Counterparts*

BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

By: 
DENISE PAGLIUSO KECK,

By: _____
LINDA FAREED,

JAMES J. PAGLIUSO

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF CALIFORNIA
COUNTY OF Riverside

On July 14 2021 before me, J Valenzuela Lopez, a Notary Public
personally appeared Denise Pagliuso Keck

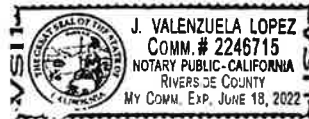
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature [Handwritten Signature]

(SEAL)



GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: J. Valenzuela Lopez

COMMISSION NO: 2246715

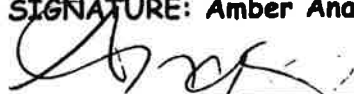
PLACE OF EXECUTION: Riverside, CA

DATE COMMISSION EXPIRES: June 18, 2022

COUNTY OF COMMISSION: Riverside

MANUFACTURER/VENDER NO: VSI1

SIGNATURE: Amber Anaya



DATE: November 30, 2021

Stewart Title-Riverside

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions, LLC
604 Sutter St., Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502

TITLE ORDER NO.: 1193541

ESCROW NO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the DOCUMENTARY TRANSFER TAX IS: \$ *Collected for on previous page*
 Unincorporated area City of IMPERIAL COUNTY
 computed on the full value of the interest of property conveyed, or
 computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
 OR transfer is EXEMPT from tax for the following reason:

Me Undersigned
Signature of declarant or agent determining tax Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as: Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof. Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records. APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

*this deed is signed in
counterparts*

BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

By: *[Signature]*
DENISE PAGLIUSO KECK,
By: *[Signature]*
LINDA FAREED,

JAMES J. PAGLIUSO

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF CALIFORNIA
COUNTY OF

Santa Barbara

On July 12, 2021 before me, Mary L. Ortega, a Notary Public
personally appeared Linda Fareed

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Mary L. Ortega

(SEAL)



GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: Mary L. Ortega

COMMISSION NO: 2268131

PLACE OF EXECUTION: Santa Barbara, CA

DATE COMMISSION EXPIRES: Dec 17, 2022

COUNTY OF COMMISSION: Santa Barbara

MANUFACTURER/VENDER NO: NNA1

SIGNATURE: Amber Anaya

 **DATE: November 30, 2021**
Stewart Title-Riverside

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions, LLC
604 Sutter St. Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502
TITLE ORDER NO.: 1193541
ESCROW NO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the **DOCUMENTARY TRANSFER TAX IS:** *Collected for on previous page*
 Unincorporated area City of IMPERIAL COUNTY
 computed on the full value of the interest of property conveyed, or
 computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.
 OR transfer is EXEMPT from tax for the following reason:

The Undersigned

Signature of declarant or agent determining tax

Firm Name

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as:
Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof.
Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records.
APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

*This Deed is signed in
Counterparts*

BRECKENRIDGE LLC, A CALIFORNIA LIMITED
LIABILITY COMPANY

By: _____
DENISE PAGLIUSO KECK,

By: _____
LINDA FAREED,

[Signature]
JAMES J. PAGLIUSO

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

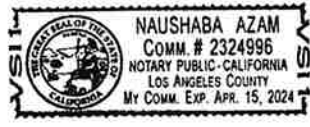
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES
On JULY 21st, 2021 before me, NAUSHABA AZAM, a Notary Public
personally appeared JAMES J. PAGLIUSO

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/hers/their authorized capacity(ies), and that by his/hers/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.
Signature Naushaba Azam (SEAL)



GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: Naushaba Azam

COMMISSION NO: 2324996

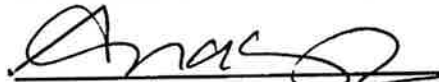
PLACE OF EXECUTION: Los Angeles, CA

DATE COMMISSION EXPIRES: April 15, 2024

COUNTY OF COMMISSION: Los Angeles

MANUFACTURER/VENDER NO: VSI1

SIGNATURE: Amber Anaya

**DATE: November 30, 2021**
Stewart Title-Riverside

Recording requested by
Stewart Title of California, Inc.

RECORDING REQUESTED BY:
STEWART TITLE COMPANY

WHEN RECORDED MAIL DOCUMENT AND TAX
STATEMENT TO:

Apex Energy Solutions, LLC
604 Sutter St., Ste 250
Folsom, CA 95630

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-
140-15-502
TITLE ORDER NO.: 1193541
ESCROW NO.: 21-11140-EC

THIS SPACE FOR RECORDER'S USE ONLY

GRANT DEED

The undersigned Grantor(s) declare(s) that the DOCUMENTARY TRANSFER TAX IS:

Unincorporated area City of IMPERIAL COUNTY

computed on the full value of the interest of property conveyed, or

computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale.

OR transfer is EXEMPT from tax for the following reason:

The Undersigned

Signature of declarant or agent determining tax

Firm Name

Collected for on previous page

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY and JAMES J. PAGLIUSO, a married man as his sole and separate property and JEAN PAGLIUSO, a married woman as her sole and separate property

HEREBY GRANT(S) to Apex Energy Solutions, LLC

All that real property situated in the City of IMPERIAL COUNTY, County of IMPERIAL, State of CA, described as: Section 36, Township 13 South, Range 16 East, S.B.M., in an unincorporated area of the County of Imperial, State of California, according to the official Plat thereof.

Excepting therefrom that portion as disclosed by that Final Order of Condemnation Recorded November 10, 1966 as Instrument No. 55 in Book 1237 Page 355 of Official Records.

APN: 039-140-013, 039-140-014, 039-140-013-502, 039-140-014-502

Commonly Known As: VACANT LAND, IMPERIAL COUNTY, CA
July 8, 2021

BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

This Deed is signed in Counterparts

By: _____
DENISE PAGLIUSO KECK,

By: _____
LINDA FAREED,

JAMES J. PAGLIUSO

Jean Pagliuso

JEAN PAGLIUSO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Page 1 of 2 Grant Deed dated July 8, 2021

VACANT LAND IMPERIAL COUNTY, /PASATIEMPO DRIVE TRUST/BRECKENRIDGE LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document

STATE OF ~~CALIFORNIA~~ NEW MEXICO AB
COUNTY OF SANTA FE

On July 22nd 2021, before me, RANDALL BROKESHOLDER a Notary Public personally appeared JEAN PAGLIUSO

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of ~~California~~ NEW MEXICO AB that the foregoing paragraph is true and correct.

WITNESS my hand and official seal
Signature [Handwritten Signature] (SEAL)



GOVERNMENT CODE 27361.7

**I CERTIFY UNDER PENALTY OF PERJURY THAT THE NOTARY SEAL
ON THE DOCUMENT TO WHICH THIS STATEMENT IS ATTACHED
READS AS FOLLOWS:**

NAME OF NOTARY: Randall Brokeshoulder

COMMISSION NO:

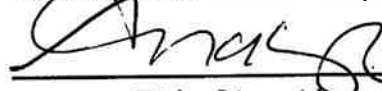
PLACE OF EXECUTION: Santa Fe, NM

DATE COMMISSION EXPIRES: April 20, 2022

COUNTY OF COMMISSION: New Mexico

MANUFACTURER/VENDER NO:

SIGNATURE: Amber Anaya



DATE: November 30, 2021

Stewart Title-Riverside

APPENDIX J



**Steven K. Williams, PG, CEG
Consulting Geologist**

Education

M.S. Geology
University of Utah, 1993
B.S. Geology
University of Utah, 1989

Registration

Registered Geologist
Arizona 33759
California 6975
Certified Engineering Geologist
California 2261

Professional Experience

2000 – Present Senior Engineering Geologist
GS Lyon Consultants, Inc.
1994 - 2000 Staff Geologist
GS Lyon Consultants, Inc.
1994 Field Geologist
Bureau of Land Management
1991 - 1992 Exploration Geologist
Kennecott Corporation

Summary of Experience

Mr. Williams has 27 years of experience in performing Phase I Environmental Site Assessments throughout the Imperial and Coachella Valleys. The scope of work for these projects typically include a site reconnaissance, review of historical and government records pertaining to previous site uses, and preparation of a report identifying potential environmental risks.

Mr. Williams has also conducted Phase II Environmental Site Assessments for the evaluation of potential soil contamination by hydrocarbons, pesticides, and other hazardous materials. Mr. Williams has also conducted Preliminary Endangerment Assessments (PEAs) for school sites within the Imperial and Coachella Valleys.

Professional Affiliations

Geological Society of America, Member
Seismological Society of America, Member

Selected Project Experience

Residential

- El Centro Seniors Apartments, El Centro, CA
- Brawley Pioneers Apartments, Brawley, CA
- Calexico Family Apartments, Calexico, CA
- Bratton Subdivision, Imperial, CA
- Linda Vista Subdivision, El Centro, CA
- Mayfield Subdivision, Imperial, CA

Industrial

- Drew Solar Farm Phase I ESA, El Centro, CA
- Seville Solar Facility Phase I ESA, Imperial County, CA
- Dixieland East and West Solar Phase I ESA, Imperial County, CA
- Imperial Solar Energy Center South Phase I ESA, Imperial County, CA
- Imperial Solar Energy Center West Phase I ESA, Imperial County, CA
- Mt. Signal III Solar Facility Phase I ESA, Imperial County, CA
- Midway Solar Facility Phase I ESA, Calipatria, CA
- Iris Cluster Solar Facility Phase I ESA, Calexico, CA
- Vega Solar Facility Phase I ESA, Calexico, CA

Municipal/Commercial

- River Ranch Packing Facility, El Centro, CA
- Farm Fresh Cooling Facility, El Centro, CA
- El Centro Magistrate Court, El Centro, CA
- Bolthouse Farms Packing Facility, Holtville, CA
- Imperial Avenue Extension, El Centro, CA
- Taco Bell, Brawley, CA
- Taco Bell, Calexico, CA
- Calexico Crossroads Plaza, Calexico, CA
- Valley Plaza, El Centro, CA
- Gateway to the Americas Phase I ESA, Calexico, CA

School Sites

- Brawley Union High School, Brawley, CA
- La Paloma Middle School PEA, Brawley, CA
- Cross Elementary School Phase I ESA, Imperial, CA
- Oasis Elementary School PEA, Mecca, CA
- North Shore Elementary School Phase I ESA, Mecca, CA



Education

B.S. Civil Engineering
California Polytechnic University, San Luis Obispo,
2011

M.S. Civil Engineering
California Polytechnic University, San Luis Obispo,
2012

Registration

Professional Engineer C84812, California

Professional Experience

2013 - Present Project Engineer
GS Lyon, Inc.
2012 - 2013 Project Engineer
BNBuilders.

Summary of Experience

Mr. LaBrucherie has 7 years of experience performing Phase I Environmental Site Assessments in Imperial County. The scope of work for these assessments typically includes site reconnaissance, review of historical and government records pertaining to previous site uses, and preparation of a report identifying potential environmental risks.

Selected Project Experience

Seville Solar Farm, Westmorland, CA

Conducted Phase I environmental site assessment for solar project located about 9 miles northwest of Westmorland, CA.

Drew Solar Farm, Imperial County, CA

Conducted Phase I environmental site assessment for 1000 acre solar project located about 9 miles southwest of El Centro, CA.

Clean Harbors Facility, Westmorland, CA

Conducted annual reports which included flood diversion, photo documentation and post closure for waste facility located about 5 miles west of Westmorland, CA.

**Peter LaBrucherie, PE
Consulting Engineer**

Ching Properties, Brawley, CA

Conducted Phase I environmental site assessment for vacant property located in Brawley, CA.

Imperial Apartments, Imperial, CA

Conducted Phase I environmental site assessment for vacant property located in Imperial, CA. Property is being proposed for apartment complex.

1409 E. Alamo Road, Holtville, CA

Conducted Phase I environmental site assessment for property (mostly vacant with some unused shop buildings and abandoned residential home) located west of Holtville, CA.

BUSD School Site, Brawley, CA

Conducted Phase I environmental site assessment for school site proposal on a vacant property located in south Brawley, CA.

CR&R Direct Transfer, El Centro, CA

Conducted Phase I environmental site assessment for commercial property (large warehouse and office with large laydown area) located in El Centro, CA.

Villa Primavera Apartments, Calexico, CA

Conducted Phase I environmental site assessment for vacant property located in Calexico, CA.

Geotechnical Report

Proposed Northstar 2 Solar Project Hwy 78 and EHL Canal (APN 039-140-013 and 14) Imperial County, California

Prepared for:

Apex Energy Solutions, LLC
750 W. Main Street
El Centro, CA 92243



Prepared by:

LANDMARK
Geo-Engineers and Geologists

Landmark Consultants, Inc.
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Mr. Ziad Alaywan
Apex Energy Solutions, LLC
750 W. Main Street
El Centro, CA 92243

**Geotechnical Report
Proposed NorthStar 2 Solar Project
Hwy 78 and EHL Canal (APN 039-140-013 and 014)
Imperial County, California
LCI Report No. LE22170**

Dear Mr. Alaywan:

This geotechnical report is provided for design and construction of the proposed 614-acre NorthStar 2 solar project located on the north side of Hwy 78 (APN 039-140-013 and 014) about 1 mile east of the East Highline Canal approximately 14 miles east of Brawley, California. Our geotechnical exploration was conducted in response to your request for our services. The enclosed report describes our soil engineering site evaluation and presents our professional opinions regarding geotechnical conditions at the site to be considered in the design and construction of the project.

Based on the geotechnical conditions encountered at the points of exploration, the project site appears suitable for the proposed construction provided the professional opinions contained in this report are considered in the design and construction of this project.

We appreciate the opportunity to provide our findings and professional opinions regarding geotechnical conditions at the site. Please provide our office with a set of the foundation plans and civil plans for review to insure that the geotechnical site constraints have been included in the design documents. If you have any questions or comments regarding our findings, please call our office at (760) 370-3000.

Respectfully Submitted,
Landmark Consultants, Inc.


Julian R. Avalos, GE
Senior Geotechnical Engineer




Steven K. Williams, PG, CEG
Senior Engineering Geologist




Peter E. LaBrucherie, PE
Principal Engineer



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- APPENDIX D: Pipe Bedding and Trench Backfill Recommendations
- APPENDIX E: Electrical and Thermal Resistivity
- APPENDIX F: References

EXECUTIVE SUMMARY

This executive summary presents *selected* elements of our findings and professional opinions. This summary *may not* present all details needed for the proper application of our findings and professional opinions. Our findings, professional opinions, and application options are *best related through reading the full report*, and are best evaluated with the active participation of the engineer of record who developed them. The findings of this study are summarized below:

- The site soils consist of loose to medium dense sands/silty sands (SP/SM) which are considered non-expansive.
- Special foundation designs to mitigate expansive soil conditions are not required.
- The evaluation for the potential for liquefaction induced settlements at the site is not included in the scope of work for this project.
- The native soils are slightly aggressive to concrete and steel. Concrete mixes shall have a maximum water cement ratio of 0.55 and a minimum compressive strength of 3,000 psi (II/V cement per cubic yard). Bare steel in contact with native soil will require protective coatings to mitigate corrosion.
- All reinforcing bars, anchor bolts and hold down bolts shall have a minimum concrete cover of 3.0 inches unless epoxy coated (ASTM D3963/A934). Hold-down straps are not allowed at foundation perimeters. No pressurized water lines are allowed below or within foundations.
- Pavement structural sections should be designed with an R-value of 40 for the native sandy soils.
- All-weather accessways should consist of a minimum of 6 inches of Caltrans Class 2 aggregate base material placed over 12 inches of compacted native sands (95%). Cement stabilization or polymer modified soil is an alternative for internal roads stabilization within this project due to the existing subgrade composition of fine to medium grained sands.

Section 1

INTRODUCTION

1.1 Project Description

This report presents the findings of our geotechnical exploration and soil testing for the proposed NorthStar 2 solar project located at the north side of Hwy 78 (APN 039-140-013 and 014) approximately 1 mile east of the East Highline Canal approximately 14 miles east of Brawley, California. The proposed project will consist of approximately 614 acres of PV solar panels mounted on steel racks supported by short piers, shallow driven steel posts or shallow spread footings. Also, the proposed solar energy facility will have ground mounted or pier supported inverter stations. The photovoltaic modules will be ground mounted on single-axis trackers or fixed-tilt frames. A grading plan for the proposed development was not made available to us at the time that this report was prepared.

Information about O&M building, control rooms, electrical substation, gen-tie line and/or battery storage structures was not provided at the time that this report was prepared. If mentioned structures are planned to be part of this project additional subsurface exploration may be required. Site development will include site grading, solar panel installation, underground utility installation, substation construction, and site fence construction.

1.2 Purpose and Scope of Work

The purpose of this geotechnical study was to investigate the subsurface soil at selected locations within the site for evaluation of physical/engineering properties and liquefaction potential during seismic events. Professional opinions were developed from field and laboratory test data and are provided in this report regarding geotechnical conditions at this site and the effect on design and construction. The scope of our services consisted of the following:

- Field exploration and in-situ testing of the site soils at selected locations and depths.
- Laboratory testing for physical and/or chemical properties of selected samples.
- Review of the available literature and publications pertaining to local geology, faulting, and seismicity.
- Engineering analysis and evaluation of the data collected.
- Preparation of this report presenting our findings and professional opinions regarding the geotechnical aspects of project design and construction.

This report addresses the following geotechnical parameters:

- Subsurface soil and groundwater conditions
- Site geology, regional faulting and seismicity, near source factors, and site seismic accelerations
- Expansive soil and methods of mitigation
- Aggressive soil conditions to metals and concrete

Professional opinions with regard to the above parameters are provided for the following:

- Site grading and earthwork
- Building pad and foundation subgrade preparation
- Allowable soil bearing pressures and expected settlements
- Concrete slabs-on-grade
- Typical capacities for drilled piers and driven steel piles
- Excavation conditions and buried utility installations
- Mitigation of the potential effects of salt concentrations in native soil to concrete mixes and steel reinforcement
- Seismic design parameters

Our scope of work for this report did not include an evaluation of the site for liquefaction during earthquakes or for the presence of environmentally hazardous materials or conditions, storm water infiltration, on-site wastewater percolation rates, groundwater mounding, or landscape suitability of the soil.

1.3 Authorization

Mr. Ziad Alaywan, President of Apex Energy Solutions, LLC provided authorization by written agreement to proceed with our work on August 8, 2022. . We conducted our work in general accordance with our written proposal dated June 28, 2022.

Section 2

METHODS OF INVESTIGATION**2.1 Field Exploration**

Subsurface exploration was performed on August 30, 2022 by using a backhoe to excavate four (4) test pits to an approximate depth of 6.5 feet below the existing ground surface. The test pit locations are shown on the Site and Exploration Plan (Plate A-2). Bulk samples were obtained at selected depths in the test pits. A nuclear densometer (ASTM D6938) was used to evaluate in-situ densities and natural moisture content at selected depths in the upper 6 feet of the backhoe pits. Pocket penetrometer readings were also obtained to evaluate the stiffness of cohesive soil encountered.

After logging and sampling the soil, the exploratory test pits were backfilled with the excavated material. The backfill was loosely placed and was not compacted to the requirements specified for engineered fill. The backhoe pits shall be located during rough grading of the site to properly recompact the backfill.

Additional subsurface exploration was performed on September 12, 2022 using 2R Drilling of Ontario, California to advance six (6) borings to depths of 21.5 feet below existing ground surface. The borings were advanced with a track-mounted, CME 75 drill rig using 8-inch diameter, hollow-stem, continuous-flight augers. The approximate boring locations were established in the field and plotted on the site map by sighting to discernible site features. The boring locations are shown on the Site and Exploration Plan (Plate A-2).

A professional engineer observed the drilling operations and maintained logs of the soil encountered with sampling depths. Soils were classified during drilling according to the Unified Soil Classification System using the visual-manual procedure in accordance with ASTM D2488. Relatively undisturbed and bulk samples of the subsurface materials were obtained at selected intervals. The relatively undisturbed soil samples were retrieved using a 2-inch outside diameter (OD) split-spoon sampler or a 3-inch OD Modified California Split-Barrel (ring) sampler lined with 6-inch stainless-steel sleeves. In addition, Standard Penetration Tests (SPT) were performed in accordance with ASTM D1586 and ASTM D6066. The samples were obtained by driving the samplers ahead of the auger tip at selected depths using a 140-pound CME automatic hammer with a 30-inch drop.

The number of blows required to drive the samplers the last 12 inches of an 18-inch drive depth into the soil is recorded on the boring logs as “blows per foot”. Blow counts (N values) reported on the boring logs represent the field blow counts. No corrections have been applied to the blow counts shown on the boring logs for effects of overburden pressure, automatic hammer drive energy, drill rod lengths, liners, and sampler diameter. Pocket penetrometer readings were also obtained to evaluate the stiffness of cohesive soils retrieved from sampler barrels.

After logging and sampling the soil, the exploratory borings were backfilled with the excavated material. The backfill was loosely placed and was not compacted to the requirements specified for engineered fill.

A professional engineer observed the drilling operations and maintained logs of the borings and test pits during exploration. The logs were edited in final form after a review of retrieved samples and the field and laboratory data. The subsurface exploration logs are presented on Plates B-1 through B-10 in Appendix B. Soils encountered in the test pits were classified according to the Unified Soil Classification System using the visual-manual procedure in accordance with ASTM D2488. A key to the test pit logs is presented on Plate B-11. The stratification lines shown on the subsurface logs represent the approximate boundaries between the various strata. However, the transition from one stratum to another may be gradual over some range of depth.

2.2 Field Electrical Resistivity Testing

Wenner 4-pin field resistivity testing was conducted by RF Yeager Engineering of Lakeside, California under sub-contract to Landmark at three (3) locations within the proposed solar array site in accordance with ASTM G57 standards. Tests were conducted with both North-South and East-West pin orientations. The tests were conducted at pin spacings of 2.5, 5, 10, 15, 20 and 40 feet. Additionally, near surface soil samples (upper 3 feet) were obtained for laboratory soil corrosivity testing at the select location. The results of the electrical resistivity and soil corrosivity testing are presented in Appendix E.

2.3 Thermal Resistivity Testing

Laboratory soil thermal resistivity testing was conducted by RF Yeager Engineering at three (3) locations within the project site. The tests were conducted at the locations shown on Figure 1 in Appendix E. The testing was conducted in accordance with ASTM D5334. Near surface soil samples were obtained from test pits T-1, T-2 and T-3 as shown on Figure 1 in Appendix E.

The thermal resistivity testing consisted of determining a thermal dry-out curve at each test location. The results of the thermal resistivity testing are presented in Appendix E.

2.4 Laboratory Testing

Laboratory tests were conducted on selected bulk (auger cuttings) and relatively undisturbed soil samples obtained from the soil borings and test pits to aid in classification and evaluation of selected engineering properties of the site soils. The tests were conducted in general conformance to the procedures of the American Society for Testing and Materials (ASTM) or other standardized methods as referenced below.

- Plasticity Index (ASTM D4318)
- Particle Size Analyses (ASTM D6913/D7928)
- Unit Dry Densities (ASTM D2937)
- Moisture Contents (ASTM D2216)
- Direct Shear (ASTM D3080)

The laboratory test results are presented on the subsurface logs (Appendix B) and in Appendix C.

Engineering parameters of soil strength, compressibility and relative density utilized for developing design criteria provided within this report were obtained from the field and laboratory testing program.

Section 3

DISCUSSION

3.1 Site Conditions

The project site is located at the north side of Hwy 78 (APN 039-140-013 and 014) about 1 mile east of the East Highline Canal approximately 14 miles east of Brawley, California. The project site is square in plan view with an undulating topography. The site consists of approximately 614 acres of vacant desert land. Several large, loose, blow sand dunes cover the site surface. Desert brush and weeds are scattered throughout the site. Adjacent properties are flat-lying and are approximately at the same elevation with this site, consisting of desert lands. Highway 78 abuts the southern property edge.

The project site lies at an elevation of approximately 50 to 90 feet above mean sea level (MSL) (El. 1050 to 1085 local datum) in the Imperial Valley region of the California low desert. The surrounding properties lie on terrain, which is planar, part of a large agricultural valley, which was previously an ancient lake bed covered with fresh water to an elevation of 43± feet above MSL. Annual rainfall in this arid region is less than 3 inches per year with four months of average summertime temperatures above 100 °F. Winter temperatures are mild, seldom reaching freezing.

3.2 Geologic Setting

The project site is located on the East Mesa area of the eastern Salton Trough region of the Colorado Desert physiographic province of southeastern California. The Salton Trough is a topographic and geologic structural depression resulting extending from the San Gorgonio Pass to the Gulf of California (Norris & Webb, 1990). The Salton 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 deposited since the Miocene Epoch (Morton, 1977). 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 Late Pleistocene to Holocene lake deposits of the Imperial Valley are probably less than 100 feet thick and derived from periodic flooding of the Colorado River which intermittently formed 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

The East Mesa lies east of the Imperial Valley and west of the Algodones Sand Dunes is underlain by lacustrine deposits consisting of interbedded lenticular and tabular silt, sand, and clay. The East Mesa is underlain by deep sand deposits which are generally non-expansive and derived from eolian deposition along the eastern margin of the Imperial Valley.

3.3 Subsurface Soil

Subsurface soils encountered during the field exploration conducted on August 30 and September 12, 2022 consist of medium dense to dense sands/silty sands (SP/SM) to a depth of 21.5, the maximum depth of exploration. The surficial sands are generally loose with very little fines content, making wheeled travel across the site difficult. Large sand dunes approximately 10 to 20 feet in height of surficial loose blow sands (SP/SM) to a depth of 1 to 5 feet below ground surface are scattered across the site. A 1-foot thick hard silty clay (CL) layer was encountered only at test pit T-2 between a depth of 4 to 5 feet below ground surface. This clay layer is like an interdune deposit. The subsurface logs (Plates B-1 through 10) depict the stratigraphic relationships of the subsurface soil encountered at the points of exploration. Variations in subsurface stratigraphy may occur between the points of exploration. The stratification lines shown on the subsurface log represent the approximate boundaries between the various strata. However, the transition from one stratum to another may be gradual over some range of depth.

The U. S. Soil Conservation Service compiled a map of surface soil conditions and published a soil survey report including maps in 1980. The soil survey maps indicate that surficial deposits at the subject property and surrounding area consist predominantly of sands and sandy loams of the Rositas, Superstition, Antho, and Holtville soil groups (see Appendix B). These loams are formed in sediment and alluvium of mixed origin (Colorado River overflows, fresh-water lake-bed sediments, and alluvial fan deposits) and aeolian deposits. Based on Unified Soil Classification System presented in the Soils Survey Report, the permeability of these soils is expected to be high within the upper 2 feet and low below 2 feet below ground surface.

3.4 Groundwater

Groundwater was not encountered in the borings and test pits at the time of exploration.

3.5 Faulting

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. We have performed a computer-aided search of known faults or seismic zones that lie within a 41.6 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. The criterion for fault classification adopted by the California Geological Survey defines Earthquake Fault Zones along Holocene-active or pre-Holocene faults (CGS, 2022b). 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 A-P act.

Review of the current Earthquake Fault Zone maps (CGS, 2022a) indicates that the nearest zoned fault is the Brawley Seismic Zone located approximately 12.4 miles west of the project site.

3.6 General Ground Motion Analysis

The project site is considered likely to be subjected to moderate to strong ground motion from earthquakes in the region. Ground motions are dependent primarily on the earthquake magnitude and distance to the seismogenic (rupture) zone. Acceleration magnitudes also are dependent upon attenuation by rock and soil deposits, direction of rupture and type of fault; therefore, ground motions may vary considerably in the same general area.

2019 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 and E sites 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, 2019). **This project site has been classified as Site Class D and has a S_1 value of 0.45, which would require a site-specific ground motion hazard analysis.** However, ASCE 7-16 Section 11.4.8 provides three 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 exceptions are:

- Exception 1: Structures on Site Class E sites with S_s greater than or equal to 1.0, provided the site coefficient F_a is taken as equal to that of Site Class C.
- Exception 2: Structures on Site Class D sites with S_1 greater than or equal to 0.2, provided the value of the seismic response coefficient C_s is determined by Equations 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Equation 12.8-3 for $T_L \geq T > 1.5T_s$ or Equation 12.8-4 for $T > T_L$.
- Exception 3: Structures on Site Class E sites with S_1 greater than or equal to 0.2, provided that T is less than or equal to T_s and the equivalent static force procedure is used for design.

Based on our understanding of the proposed development, the seismic design parameters presented in Table 2 were calculated assuming that one of the exceptions listed above applies to the proposed structures at this site. **However, the structural engineer should verify that one of the exceptions is applicable to the proposed structures.** If none of the exceptions apply, our office should be consulted to perform a site-specific ground motion hazard analysis.

The 2019 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, 2022) 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 (PGA_M) value to be used for liquefaction and seismic settlement analysis in accordance with 2019 CBC Section 1803.5.12 ($PGA_M = F_{PGA} * PGA$) is estimated at 0.55g for the project site. **Design earthquake ground motion parameters are provided in Table 2.**

3.7 Seismic and Other Hazards

- **Groundshaking.** The primary seismic hazard at the project site is the potential for strong groundshaking during earthquakes along the Imperial, Brawley, and San Andreas faults.
- **Surface Rupture.** The California Geological Survey (2022b) has established Earthquake Fault Zones in accordance with the 1972 Alquist-Priolo Earthquake Fault Zone Act. The Earthquake Fault Zones consists of boundary zones surrounding well defined, active faults or fault segments. 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.
- **Liquefaction and lateral spreading.** Liquefaction is unlikely to be a potential hazard at the site since the groundwater is believed to be deeper than 50 feet. 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). *The evaluation for the potential for liquefaction induced settlements at the site is not included in the scope of work for this project.*

Other Potential Geologic Hazards.

- **Landsliding.** The hazard of landsliding is unlikely due to the regional planar topography. No ancient landslides are shown on geologic maps, aerial photographs and topographic maps of the region and no indications of landslides were observed during our site investigation.

- **Volcanic hazards.** The site is not located proximal to any known volcanically active area and the risk of volcanic hazards is considered low. Obsidian Butte and Red Hill, located at the south end of the Salton Sea approximately 25 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.
- **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 not located near any large bodies of water, so the threat of tsunami, seiches, or other seismically-induced flooding is considered unlikely.
- **Flooding.** Based on our review of FEMA (2022) FIRM Panel 06025C1425C which encompasses the project site, the project site is located in Flood Zone X, an area determined to be outside the 0.2% annual chance (500-year) floodplain.
- **Collapsible soils.** Collapsible soil generally consists of dry, loose, low-density material that have the potential collapse and compact (decrease in volume) when subjected to the addition of water or excessive loading. Soils found to be most susceptible to collapse include loess (fine grained wind-blown soils), young alluvium fan deposits in semi-arid to arid climates, debris flow deposits and residual soil deposits. In general, the surface soils are loose to medium dense sands (SP-SM). Due to the nature of the sand deposits, there is a slight risk of collapse upon saturation.
- **Expansive soils.** The near surface soils in the project site are sands/silty sands which are considered non-expansive.

Section 4

DESIGN CRITERIA**4.1 Site Preparation**

Clearing and Grubbing: All debris or vegetation including grass and weeds on the site at the time of construction should be removed from the construction area. Root balls should be completely excavated. Organic strippings should be stockpiled and not used as engineered fill.

Mass Grading: Some mass grading (cut and fill) is assumed to be needed across a majority of the site due to the sites topography variation. Prior to general site grading, the backhoe test pit locations shall be identified and the loose backfill compacted to a depth of 7 feet. In areas designated for fill, the surface 12 inches of native soil shall be scarified uniformly moisture conditioned to within 2% of optimum and compacted to at least 90% of ASTM D1557 maximum density. Onsite native soils used for fill should be placed in lifts no greater than 8 inches in loose thickness and compacted to a minimum of 90% of ASTM D1557 maximum dry density at optimum moisture $\pm 2\%$. Since native surface blow sands may become loose and drift even after compaction, mixing the surface sands with onsite native silty sands or the use of a soil-cement mix (2 to 7% of cement by weight of soil), polymer modification or capping the compacted surface sands with a crushed material like aggregate base may be necessary.

The native granular soil is suitable for use as compacted fill and utility trench backfill. The native soil should be placed in maximum 8 inch lifts (loose) and compacted to a minimum of 90% of ASTM D1557 maximum dry density at optimum moisture $\pm 2\%$. The geotechnical engineer should approve imported fill soil sources before hauling material to the site. Imported granular fill should be placed in lifts no greater than 8 inches in loose thickness and compacted to a minimum of 90% of ASTM D1557 maximum dry density at optimum moisture $\pm 2\%$.

Building Pad Preparation: The existing soils within building pad/foundation areas should be overexcavated to a minimum depth of 24 inches below the existing natural surface grade or deepest footing (whichever is greater) and should extend at least five (5) feet beyond all exterior wall/column lines (including concreted areas adjacent to the building). Exposed subgrade should be scarified to a depth of 8 inches, uniformly moisture conditioned to 2% below to 2% above optimum (sands) and recompacted to a minimum of 90% (sands) of the maximum density determined in accordance with ASTM D1557 methods.

If loose blow sands are encountered at the bottom of the exposed subgrade should be saturated to a depth of 48 inches below the bottom of the excavation and compacted with a large vibratory drum roller to at least 90% of ASTM D1557 maximum density. Vibratory rolling should continue until less than 0.25 inches of consolidation occurs between roller passes. In lieu of this method the grading contractor may overexcavate an additional 3 feet below the bottom of excavation and prepare the subgrade to the limits specified above.

The native soil is suitable for use as engineered fill provided it is free from concentrations of organic matter or other deleterious material. The fill soil should be uniformly moisture conditioned by discing and watering to the limits specified above, placed in maximum 8-inch lifts (loose), and compacted to the limits specified above. Clay soil, if encountered, should not be incorporated into any engineered building pads.

If imported soils are required, these should meet the USCS classifications of ML (non-plastic), SM, SP-SM, or SW-SM with a maximum rock size of 3 inches and no less than 5% passing the No. 200 sieve. The geotechnical engineer should approve imported fill soil sources before hauling material to the site. Imported fill should be placed in lifts no greater than 8 inches in loose thickness and compacted to a minimum of 90% of ASTM D1557 maximum dry density at optimum moisture $\pm 2\%$.

Subgrade Preparation for Mat Foundations: The native sandy soil within mat foundation areas should be removed to 18 inches below the bottom of the mat foundations or 30 inches below existing grade (whichever is lower) to 2 feet beyond the edges of the foundation. Exposed subgrade should be scarified to a depth of 8 inches, uniformly moisture conditioned to $\pm 2\%$ of optimum moisture content, and recompacted to a minimum of 90% of the maximum density determined in accordance with ASTM D1557 methods. The engineered mat foundation pads may be constructed by uniformly moisture conditioning the removed native soils to $\pm 2\%$ of optimum moisture and placing the soils in 8-inch maximum lifts (loose), and compacted to the limits specified above.

Utility Trench Backfill: On-site soil free of debris, vegetation, and other deleterious matter may be suitable for use as utility trench backfill above pipezone, but may be difficult to uniformly maintain at specified moistures and compact to the specified densities. Native backfill should only be placed and compacted after encapsulating buried pipes or direct burial cables with suitable granular bedding materials and pipe envelope material.

Backfill soil of utility trenches within paved areas should be placed in layers not more than 6 inches in thickness and mechanically compacted to a minimum of 90% of the ASTM D1557 maximum dry density.

Observation and Density Testing: All site preparation and fill placement should be observed and tested by a representative of a qualified geotechnical engineering firm. The geotechnical firm that provides observation and testing during construction shall assume the responsibility of "*geotechnical engineer of record*" and, as such, shall perform additional tests and investigation as necessary to satisfy themselves as to the site conditions and the recommendations for site development.

4.2 Foundations and Settlements

Shallow spread or continuous conventional footings are suitable to support the building and site structures within the electrical substation. The foundations may be designed using an allowable soil bearing pressure of 2,000 psf when foundations are supported on imported or native compacted sands (extending a minimum of 1.5 feet below footings). The allowable soil pressure may be increased by 20% for each foot of embedment depth in excess of 18 inches and by one-third for short term loads induced by winds or seismic events. The maximum basic allowable soil pressure at increased embedment depths shall not exceed 3,500 psf.

Resistance to horizontal loads will be developed by passive earth pressure on the sides of footings and frictional resistance developed along the bases of footings and concrete slabs. Passive resistance to lateral earth pressure may be calculated using an equivalent fluid pressure of 300 pcf to resist lateral loadings. The top one foot of embedment should not be considered in computing passive resistance unless the adjacent area is confined by a slab or pavement. An allowable friction coefficient of 0.35 may also be used at the base of the footings to resist lateral loading.

Perimeter footings should be embedded a minimum of 18 inches below the lowest adjacent final grade. Continuous wall footings should have a minimum width of 12 inches. Spread footings should have a minimum dimension of 24 inches and should be structurally tied to perimeter footings or grade beams. Recommended concrete reinforcement and sizing for all footings should be provided by the structural engineer.

Flat Plate Structural Mats: Structural concrete mat foundations may be designed using an allowable soil bearing pressure of 2,000 psf when the foundation is supported on minimum 18 inches of compacted sands. The allowable soil pressure may be increased by one-third for short term loads induced by winds or seismic events. Design criteria for mat foundations are provided below.

Structural mats may be designed for a modulus of subgrade reaction (Ks) of 175 pci when placed on 18 inches of compacted sands and 200 pci when placed on 6 inches of compacted Class 2 aggregate base. Resistance to horizontal loads will be developed by passive earth pressure on the sides of footings and frictional resistance developed along the bases of footings and concrete slabs. Passive resistance to lateral earth pressure may be calculated using an equivalent fluid pressure of 300 pcf to resist lateral loadings. The top one foot of embedment should not be considered in computing passive resistance unless the adjacent area is confined by a slab or pavement. An allowable friction coefficient of 0.35 may also be used at the base of the footings to resist lateral loading.

Foundation movement under the estimated loadings are estimated to not exceed 1 inch with differential movement of about two-thirds of total movement for the loading assumptions stated above when the subgrade preparation guidelines given above are followed.

4.3 Drilled Piers and Driven Steel Piles

Drilled Piers: Individual short piers should be adequate to support solar panel frames, inverter frames, and security camera poles. Embedment depth for short piers to resist lateral loads where no lateral constraint at the ground surface is provided may be designed using the following formula per 2019 CBC Section 1807.3.2.1:

$$d = A/2 [1 + (1+4.36h/A)^{1/2}]$$

where:

$$A = 2.34P/S_1b$$

b = Pier diameter in feet

d = Embedment depth in feet (but not over 12 feet for purpose of computing lateral pressure)

h = Distance in feet from ground surface to point of application of “P”

P = Applied lateral force in pounds

S_1 = Allowable lateral soil bearing pressure (basic value of 150 psf/ft. Isolated piers such solar panel short piers that are not adversely affected by a 0.5 inch motion at the ground surface due to short-term lateral loads are permitted to be designed using lateral soil bearing pressures equal to two times the provided value (300 psf/ft). This load increase should not be used for the security camera pole foundation designs.

The short pier foundations may be designed using an allowable soil bearing pressure of 2,000 psf. The uplift capacity may be defined as the sum of the frictional resistance of the soils against the concrete pile plus the weight of the pile as follows:

$$P_{all} = (KHT \cdot P_o \cdot \tan \delta \cdot \pi \cdot D \cdot H) / FS + W_p,$$

Incorporating the soil conditions at the site and applying a Safety Factor of 3 it may be expressed as,

$$P_{all} = 16DH^2 + W_p$$

where:

P_{all} = Allowable Uplift Capacity in pounds

D = Diameter of the pile in feet

H = Depth of embedment below ground surface in feet (to a maximum of 14 feet)

W_p = Weight of the pile in pounds

Installation: Excavation for piers should be inspected by the geotechnical consultant. A tremie pipe should be used to pour concrete from the bottom up and to ensure less than five feet of free fall. Groundwater was not encountered in the borings (>21.5 feet bgs) during the time of exploration. The structural steel and concrete should be placed immediately after drilling. Prior to placing any structural steel or concrete, loose soil or slough material should be removed from the bottom of the drilled pier excavation.

Driven Steel Piles: The use of driven steel posts requires special provisions for corrosion protection due to the corrosive nature of the subsurface soils. Steel posts for PV panel mounting frames have been preliminary sized as W8x10 (frame and axle supports).

Vertical Capacity: Vertical capacity for the preliminary W8x10 steel post section is presented in Table 3. End bearing and skin friction parameters have been used to determine the allowable shaft capacity. The allowable capacities include a factor of safety of 2.5. The allowable vertical compression capacities may be increased by 33 percent to accommodate temporary loads from wind or seismic forces. The allowable vertical shaft capacities are based on the supporting capacity of the soil.

Lateral Capacity: The allowable lateral capacity for a W8x10 steel post section at 6, 8 and 10 feet embedment depths are given in Table 3. The allowable lateral capacity is based on a deflection of one-half inch at the top of the steel post section. If greater deflection can be tolerated, lateral load capacity can be increased directly in proportion to a maximum of one inch deflection. Axial and lateral loads were applied at 4.0 feet above ground surface.

Table 3: Allowable Capacities of Driven Steel Posts

Pile Type:	Driven W8x10		
	10 ft	12 ft	14 ft
Pile Length (ft):	10 ft	12 ft	14 ft
Specified Tip Depth (ft):	6 ft	8 ft	10 ft
Height Above Ground (ft):	4 ft	4 ft	4 ft
Allowable Axial Capacity (kips) – FS=2.5:	0.96	1.52	2.06
Allowable Uplift Capacity (kips) – FS=2.5:	0.47	0.75	1.04
Lateral Load – Free Head Condition (kips):	0.85	1.10	1.12
Top Deflection (in) – Free Head Condition	0.50	0.50	0.50
Maximum Moment from Lateral Load, Free Head Condition (ft-kips):	4.93	6.63	6.77
Depth of Maximum Moment (from Top of Post), Free Head (ft):	6.2	6.5	6.6

Recommendations for other post sections can be made available upon request.

Soil Parameters: Interpretive soil parameters of the subsoil for AllPile software are presented in the table below.

Table 4: Soil Strength Parameters for AllPile Program

Layer Type	Depth (ft)	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (ksf)	Lateral Soil Modulus, k (pci)	e50 or Dr
SP-SM	0 to 1	100	30°	0	30	30
SP-SM	1 to 15	105	34°	0	75	45

(*) k value for static loading. For cycling loading, use 50% of listed value.

Settlement: Total settlements of less than ¼ inch, and differential movement of about two-thirds of total movement for single piles designed according to the preceding recommendations.

Axial Load Group Effect: Reduction in axial load capacity shall be considered necessary for group effect. The axial load capacity shall be reduced by an efficiency factor, η . Efficiency factor, η should be 0.65 for shafts with spacing center to center equal to 2.5 shaft diameters and increases linearly to 1.0 for shafts with center to center spacing equal to 6.0 shaft diameters or more. The factor of safety of the group is the same as that of individual shaft elements.

4.4 Slabs-On-Grade

Structural concrete slabs are those that underlie structures. Concrete slabs placed on the native sand (non-cohesive) soils should have a minimum thickness of 5 inches. Concrete floor slabs shall be monolithically placed with the footings or dowelled after footing placement. The concrete slabs should be underlain by a 10-mil polyethylene vapor retarder that works as a capillary break to reduce moisture migration into the slab section. The vapor retarder should be properly lapped and continuously sealed. The vapor retarder should be overlain by 2 inches of clean sand (Sand Equivalent SE>30). Concrete slabs may be placed without a sand cover directly over a 15-mil vapor retarder (Stego-Wrap or equivalent).

Concrete slab and flatwork reinforcement should consist of chaired rebar slab reinforcement (minimum of No. 3 bars at 18-inch centers, both horizontal directions) placed at slab mid-height to resist potential swell forces and cracking.

Slab thickness and steel reinforcement are minimums only and should be verified by the structural engineer/designer knowing the actual project loadings. All steel components of the foundation system should be protected from corrosion by maintaining a 3-inch minimum concrete cover of densely consolidated concrete at footings (by use of a vibrator). The construction joint between the foundation and any sidewalks placed adjacent to foundations should be sealed with a polyurethane based non-hardening sealant to prevent moisture migration between the joint. Epoxy coated embedded steel components or permanent waterproofing membranes placed at the exterior footing sidewall may also be used to mitigate the corrosion potential of concrete placed in contact with native soil.

Control joints should be provided in all concrete slabs-on-grade at a maximum spacing (in feet) of 2 to 3 times the slab thickness (in inches) as recommended by American Concrete Institute (ACI) guidelines. All joints should form approximately square patterns to reduce randomly oriented contraction cracks. Contraction joints in the slabs should be tooled at the time of the pour or sawcut ($\frac{1}{4}$ of slab depth) within 6 to 8 hours of concrete placement. Construction (cold) joints in foundations and area flatwork should either be thickened butt-joints with dowels or a thickened keyed-joint designed to resist vertical deflection at the joint. All joints in flatwork should be sealed to prevent moisture, vermin, or foreign material intrusion. Precautions should be taken to prevent curling of slabs in this arid desert region (refer to ACI guidelines).

Non-structural Concrete: All independent flatwork (housekeeping slabs) should be placed on a minimum of 2 inches of concrete sand or aggregate base, dowelled to the perimeter foundations where adjacent to the building and sloped 2% or more away from the building. A minimum of 24 inches of moisture conditioned (minimum of optimum) and 8 inches of compacted subgrade (90% min) should underlie all independent flatwork. All flatwork should be jointed in square patterns and at irregularities in shape at a maximum spacing of 10 feet or the least width of the sidewalk.

4.5 Concrete Mixes and Corrosivity

Selected chemical analyses for corrosivity were conducted on bulk samples of the near surface soil from the project site (Appendix E). The native soils were found to have S0 (low) levels of sulfate ion concentration (40 to 510 ppm). Sulfate ions in high concentrations can attack the cementitious material in concrete, causing weakening of the cement matrix and eventual deterioration by raveling.

The following table provides American Concrete Institute (ACI, 2019) recommended cement types, water-cement ratio and minimum compressive strengths for concrete in contact with soils:

Table 4. Concrete Mix Design Criteria due to Soluble Sulfate Exposure

Sulfate Exposure Class	Water-soluble Sulfate (SO ₄) in soil, ppm	Cement Type	Maximum Water-Cement Ratio by weight	Minimum Strength f'c (psi)
S0	0-1,000	–	–	–
S1	1,000-2,000	II	0.50	4,000
S2	2,000-20,000	V	0.45	4,500
S3 – Option 1	Over 20,000	V (plus Pozzolon)	0.45	4,500
S3 – Option 2	Over 20,000	V	0.40	5,000

Note: From ACI 318-19 Table 19.3.1.1 and Table 19.3.2.1

A minimum 3,000 psi concrete of Type II/V Portland Cement with a maximum water/cement ratio of 0.55 (by weight) should be used for concrete placed in contact with native soil on this project (sitework including sidewalks, driveways, housekeeping slabs and foundations).

The native soil has low to severe levels of chloride ion concentration (30 to 850 ppm). Chloride ions can cause corrosion of reinforcing steel, anchor bolts and other buried metallic conduits. Resistivity determinations on the soil indicate moderate to very severe potential for metal loss because of electrochemical corrosion processes. Mitigation of the corrosion of steel can be achieved by using steel elements coated with epoxy corrosion inhibitors, asphaltic and epoxy coatings, cathodic protection or by zinc galvanizing.

Foundation designs shall provide a minimum concrete cover of three (3) inches around steel reinforcing or embedded components (anchor bolts, etc.) exposed to native soil or landscape water (to 18 inches above grade). If the 3-inch concrete edge distance cannot be achieved, all embedded steel components (anchor bolts, etc.) shall be epoxy dipped for corrosion protection or a corrosion inhibitor and a permanent waterproofing membrane shall be placed along the exterior face of the exterior footings. Additionally, the concrete should be thoroughly vibrated at footings during placement to decrease the permeability of the concrete.

4.6 Seismic Design

This site is located in the seismically active southern California area and the site structures are subject to strong ground shaking due to potential fault movements along the San Andreas Fault, Superstition Hills Fault, and Brawley Seismic Zone. Engineered design and earthquake-resistant construction are the common solutions to increase safety and development of seismic areas. Designs should comply with the latest edition of the CBC for Site Class D using the seismic coefficients given in Section 3.4 of this report.

4.7 Pavements and Unpaved Roads

Pavements should be designed according to CALTRANS or other acceptable methods. Traffic indices were not provided by the project engineer or owner; therefore, we have provided structural sections for several traffic indices for comparative evaluation. The public agency or design engineer should decide the appropriate traffic index for the site. Maintenance of proper drainage is necessary to prolong the service life of the pavements.

Based on the current State of California CALTRANS method, an estimated R-value of 40 (for sand soils) and assumed traffic indices, the following tables provides our estimates for asphaltic concrete (AC) and Portland Cement Concrete (PCC) pavement sections.

Table 5. Pavement Structural Sections

R-Value of Subgrade Soil – 40 (est. sand soil)		Design Method - CALTRANS 2020		
Traffic Index (assumed)	Flexible Pavements		Rigid (PCC) Pavements	
	Asphaltic Concrete Thickness (in.)	Aggregate Base Thickness (in.)	Concrete Thickness (in.)	Aggregate Base Thickness (in.)
4.0	3.0	4.0	5.0	4.0
5.0	3.0	4.0	5.5	4.0
6.0	3.0	6.0	6.0	4.0
6.5	3.0	8.0	7.0	6.0

Notes:

- 1) Asphaltic concrete shall be Caltrans, Type B, ¾ inch maximum (½ inch maximum for parking areas), medium grading with PG70-10 asphalt cement, compacted to a minimum of 95% of the Hveem density (CAL 366).
- 2) Aggregate base shall conform to Caltrans Class 2 (¾ in. maximum), compacted to a minimum of 95% of ASTM D1557 maximum dry density.
- 3) Place pavements on 12 inches of moisture conditioned (minimum 4% above optimum if clays) native clay soil compacted to a minimum of 90% (95% if sand subgrade) of the maximum dry density determined by ASTM D1557.
- 4) Portland cement concrete for pavements should have Type V cement, a minimum compressive strength of 4,500 psi at 28 days, and a maximum water-cement ratio of 0.45.
- 5) Typical Street Classifications (Imperial County)
 - Parking Areas: TI = 4.0
 - Cul-de-Sacs: TI = 5.0
 - Local Streets: TI = 6.0
 - Minor Collectors: TI = 6.5

Unpaved Roads: Unpaved roads may be used for stabilized roadways. The unpaved roads should consist of 12 inches of native soils compacted to 95% of ASTM D1557 maximum density at a minimum of optimum moisture with a 6-inch layer of Class 2 aggregate base compacted to a minimum of 95% of ASTM D1557 maximum density placed over the compacted subgrade.

Cement stabilization is an alternative for internal roads stabilization within this project since the existing subgrade is comprised of fine to medium grained sands. An 80,000 lb. two-axle truck (fire truck) was considered for the subgrade soil stabilization recommendations.

Soil–cement stabilization of the subgrade soils will result in a Gravel Factor for the treated depth, typically in the range of 1.2 to 1.5.

A minimum of 8 inches of cement-treated subgrade soil (estimated at 4% by weight) compacted to 95% minimum should yield a minimum Unconfined Compressive Strength of 300 psi. The cement application ratio should be confirmed through proper testing to obtain the minimum Unconfined Compressive Strength of 300 psi. The 80,000 lb. axle load will be adequately supported by the compacted soil–cement.

Alternative, sandy soils may be used for unpaved roads by polymer modification of the top 6 to 12 inches of soil and compacting to a minimum of 95%.

Section 5

LIMITATIONS AND ADDITIONAL SERVICES**5.1 Limitations**

The findings and professional opinions within this report are based on current information regarding the proposed 614-acre NorthStar 2 solar project located on the north side of Hwy 78 (APN 039-140-013 and 014) about 1 mile east of the East Highline Canal approximately 14 miles east of Brawley, California. The conclusions and professional opinions of this report are invalid if:

- Structural loads change from those stated or the structures are relocated.
- The Additional Services section of this report is not followed.
- This report is used for adjacent or other property.
- Changes of grade or groundwater occur between the issuance of this report and construction other than those anticipated in this report.
- Any other change that materially alters the project from that proposed at the time this report was prepared.

This report was prepared according to the generally accepted *geotechnical engineering 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.

Findings and professional opinions in this report are based on selected points of field exploration, geologic literature, limited laboratory testing, and our understanding of the proposed project. Our analysis of data and professional opinions presented herein are based on the assumption that soil conditions do not vary significantly from those found at specific exploratory locations. Variations in soil conditions can exist between and beyond the exploration points or groundwater elevations may change. The nature and extend of such variations may not become evident until, during or after construction. If variations are detected, we should immediately be notified as these conditions may require additional studies, consultation, and possible design revisions.

Environmental or hazardous materials evaluations were not performed by Landmark for this project. Landmark will assume no responsibility or liability whatsoever for any claim, damage, or injury which results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials.

The client has responsibility to see that all parties to the project including designer, contractor, and subcontractor are made aware of this entire report within a reasonable time from its issuance. This report should be considered invalid for periods after two years from the date of report issuance without a review of the validity of the findings and professional opinions by our firm, because of potential changes in the Geotechnical Engineering Standards of Practice. This report is based upon government regulations in effect at the time of preparation of this report. Future changes or modifications to these regulations may require modification of this report. Land or facility use, on and off-site conditions, regulations, design criteria, procedures, or other factors may change over time, which may require additional work. Any party other than the client who wishes to use this report shall notify Landmark of such intended use. Based on the intended use of the report, Landmark may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Landmark from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify, and hold Landmark harmless from any claim or liability associated with such unauthorized use or non-compliance.

This report contains information that may be useful in the preparation of contract specifications. However, the report is not worded in such a manner that we recommend its use as a construction specification document without proper modification. The use of information contained in this report for bidding purposes should be done at the contractor's option and risk.

5.2 Plan Review

Landmark Consultants, Inc. should be retained during development of design and construction documents to check that the geotechnical professional opinions are appropriate for the proposed project and that the geotechnical professional opinions are properly interpreted and incorporated into the documents. Landmark should have the opportunity to review the final design plans and specifications for the project prior to the issuance of such for bidding.

Governmental agencies may require review of the plans by the geotechnical engineer of record for compliance to the geotechnical report.

5.3 Additional Services

We recommend that Landmark Consultant be retained to provide the tests and observations services during construction. *The geotechnical engineering firm providing such tests and observations shall become the geotechnical engineer of record and assume responsibility for the project.*

Landmark Consultants, Inc. professional opinions for this site are, to a high degree, dependent upon appropriate quality control of subgrade preparation, fill placement, and foundation construction. Accordingly, the findings and professional opinions in this report are made contingent upon the opportunity for Landmark Consultants to observe grading operations and foundation excavations for the proposed construction.

If parties other than Landmark Consultants, Inc. are engaged to provide observation and testing services during construction, such parties must be notified that they will be required to assume complete responsibility as the geotechnical engineer of record for the geotechnical phase of the project by concurring with the professional opinions in this report and/or by providing alternative professional guidance.

Additional information concerning the scope and cost of these services can be obtained from our office.

TABLES

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)
Brawley *	12.4	19.9			
Rico *	13.5	21.6			
Imperial	14.6	23.4	7	62 ± 6	20 ± 5
Algodones *	21.7	34.8			
Superstition Hills	22.0	35.1	6.6	23 ± 2	4 ± 2
Superstition Mountain	24.9	39.8	6.6	24 ± 2	5 ± 3
Elmore Ranch	28.4	45.5	6.6	29 ± 3	1 ± 0.5
Northern Centinela*	31.2	49.9			
Route 247*	32.2	51.4			
Yuha*	34.1	54.5			
Cerro Prieto *	34.2	54.7			
Hot Springs *	34.8	55.7			
Shell Beds	35.9	57.5			
Yuha Well *	36.0	57.6			
Borrego (Mexico)*	36.7	58.8			
San Andreas - Coachella	36.8	58.8	7.2	96 ± 10	25 ± 5
Painted Gorge Wash*	37.5	60.0			
Laguna Salada	38.5	61.5	7	67 ± 7	3.5 ± 1.5
Vista de Anza*	39.1	62.6			
Pescadores (Mexico)*	39.2	62.6			
Cucapah (Mexico)*	39.2	62.7			
San Jacinto - Borrego	41.6	66.6	6.6	29 ± 3	4 ± 2

* Note: Faults not included in CGS database.

Table 2
2019 California Building Code (CBC) and ASCE 7-16 Seismic Parameters

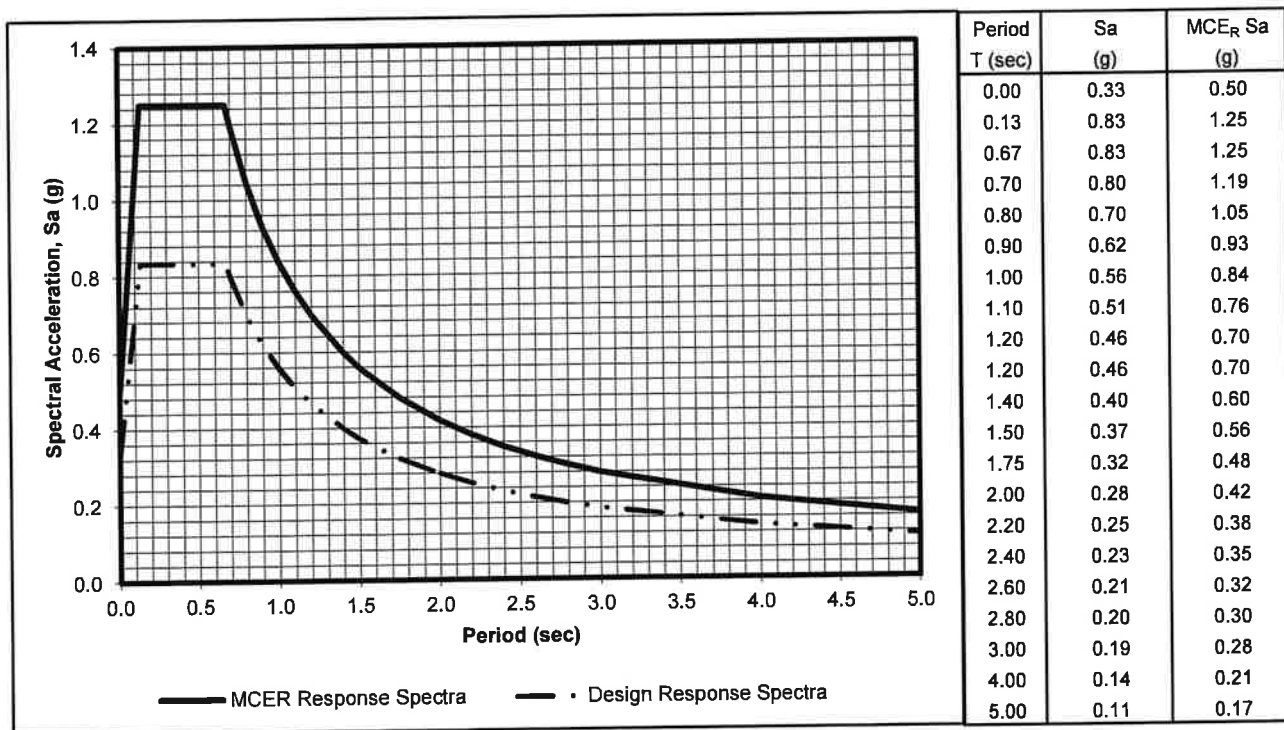
Soil Site Class:	D	<u>ASCE 7-16 Reference</u>
Latitude:	32.9775 N	Table 20.3-1
Longitude:	-115.2720 W	
Risk Category:	II	
Seismic Design Category:	D	

Maximum Considered Earthquake (MCE) Ground Motion

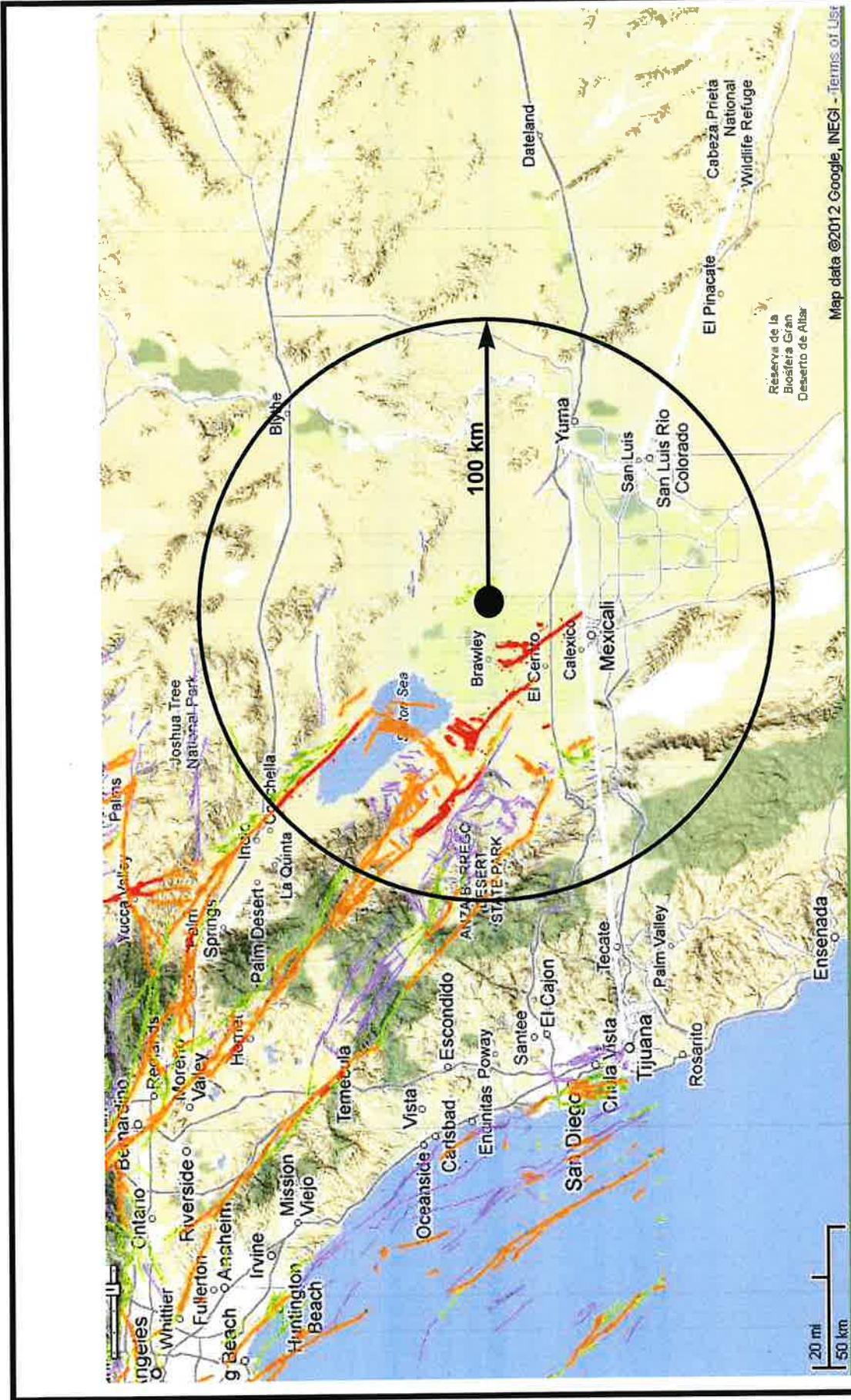
Mapped MCE _R Short Period Spectral Response	S_s	1.251 g	ASCE Figure 22-1
Mapped MCE _R 1 second Spectral Response	S₁	0.452 g	ASCE Figure 22-2
Short Period (0.2 s) Site Coefficient	F_a	1.00	ASCE Table 11.4-1
Long Period (1.0 s) Site Coefficient	F_v	1.85	ASCE Table 11.4-2
MCE _R Spectral Response Acceleration Parameter (0.2 s)	S_{MS}	1.251 g	= F _a * S _s ASCE Equation 11.4-1
MCE _R Spectral Response Acceleration Parameter (1.0 s)	S_{M1}	0.836 g	= F _v * S ₁ ASCE Equation 11.4-2

Design Earthquake Ground Motion

Design Spectral Response Acceleration Parameter (0.2 s)	S_{DS}	0.834 g	= 2/3*S _{MS}	ASCE Equation 11.4-3
Design Spectral Response Acceleration Parameter (1.0 s)	S_{D1}	0.557 g	= 2/3*S _{M1}	ASCE Equation 11.4-4
Risk Coefficient at Short Periods (less than 0.2 s)	C_{RS}	0.962		ASCE Figure 22-17
Risk Coefficient at Long Periods (greater than 1.0 s)	C_{RI}	0.937		ASCE Figure 22-18
	T_L	8.00 sec		ASCE Figure 22-12
	T_O	0.13 sec	= 0.2*S _{D1} /S _{DS}	
	T_S	0.67 sec	= S _{D1} /S _{DS}	
Peak Ground Acceleration	PGA_M	0.55 g		ASCE Equation 11.8-1



FIGURES

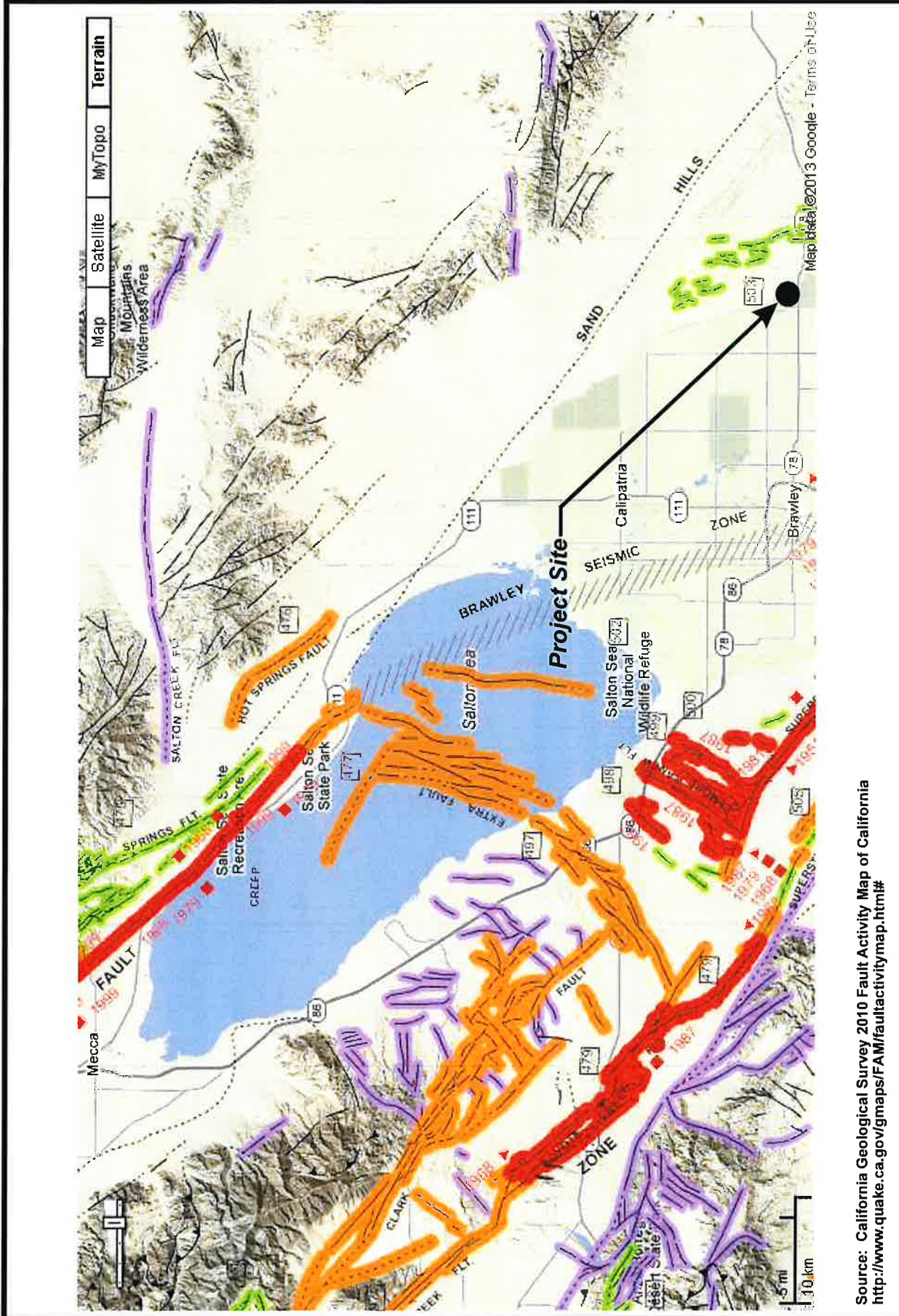


Source: California Geological Survey 2010 Fault Activity Map of California
<http://www.quake.ca.gov/maps/FAM/faultactivitymap.html#>

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Regional Fault Map

Figure 1

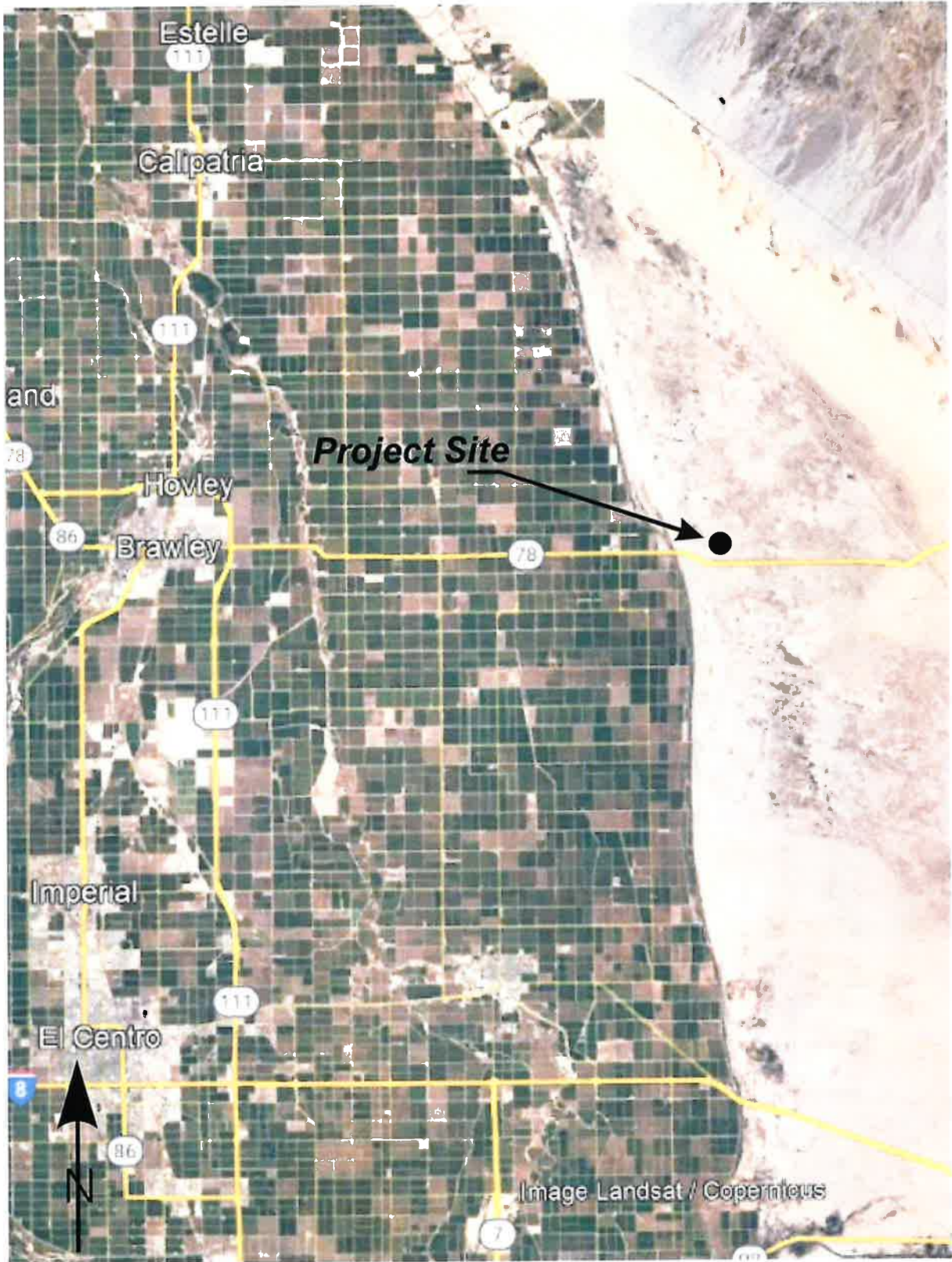


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Map of Local Faults

Figure 2

APPENDIX A



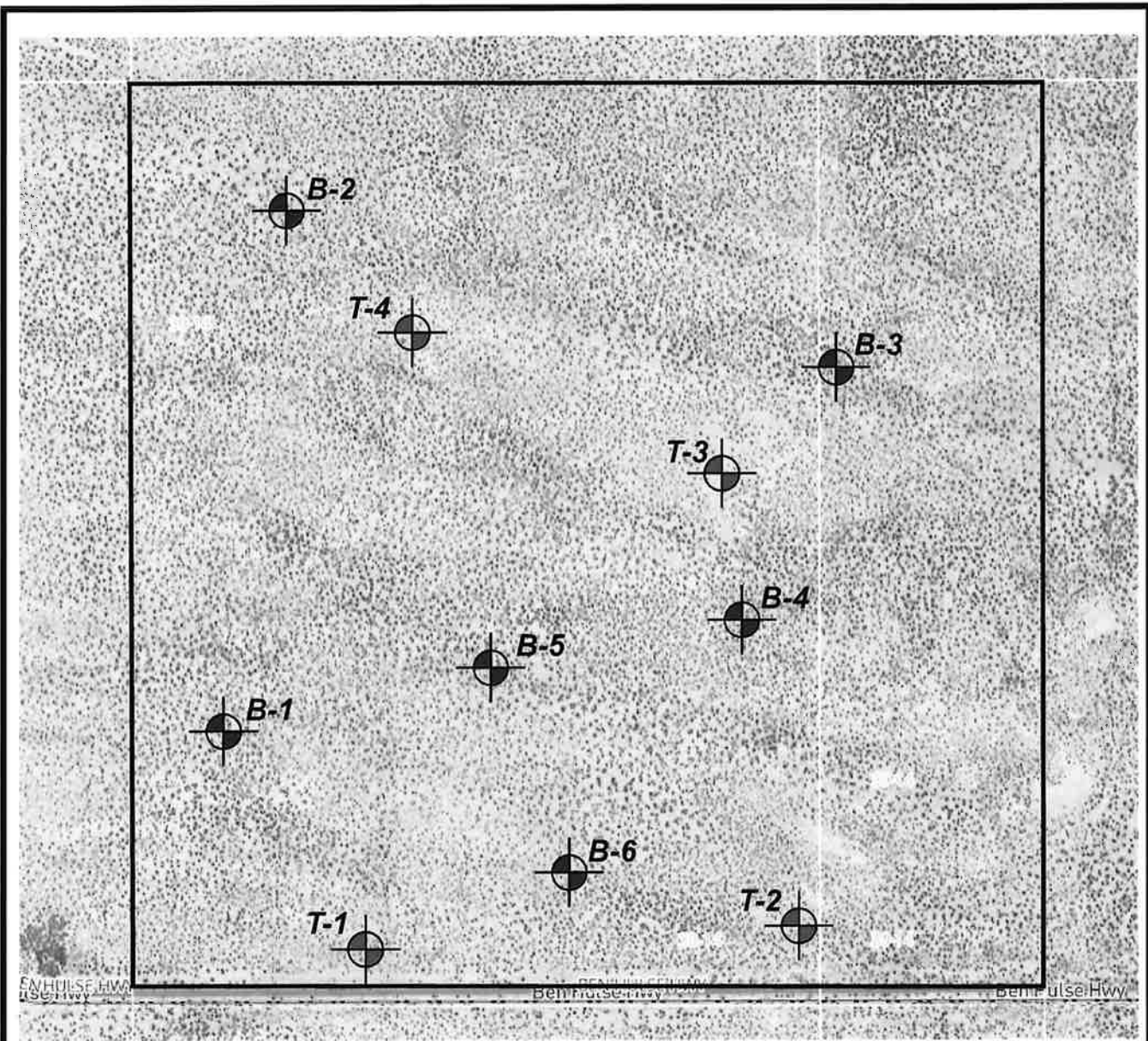
LANDMARK

Geo-Engineers and Geologists



Project No.: LE22170

Vicinity Map

Plate
A-1



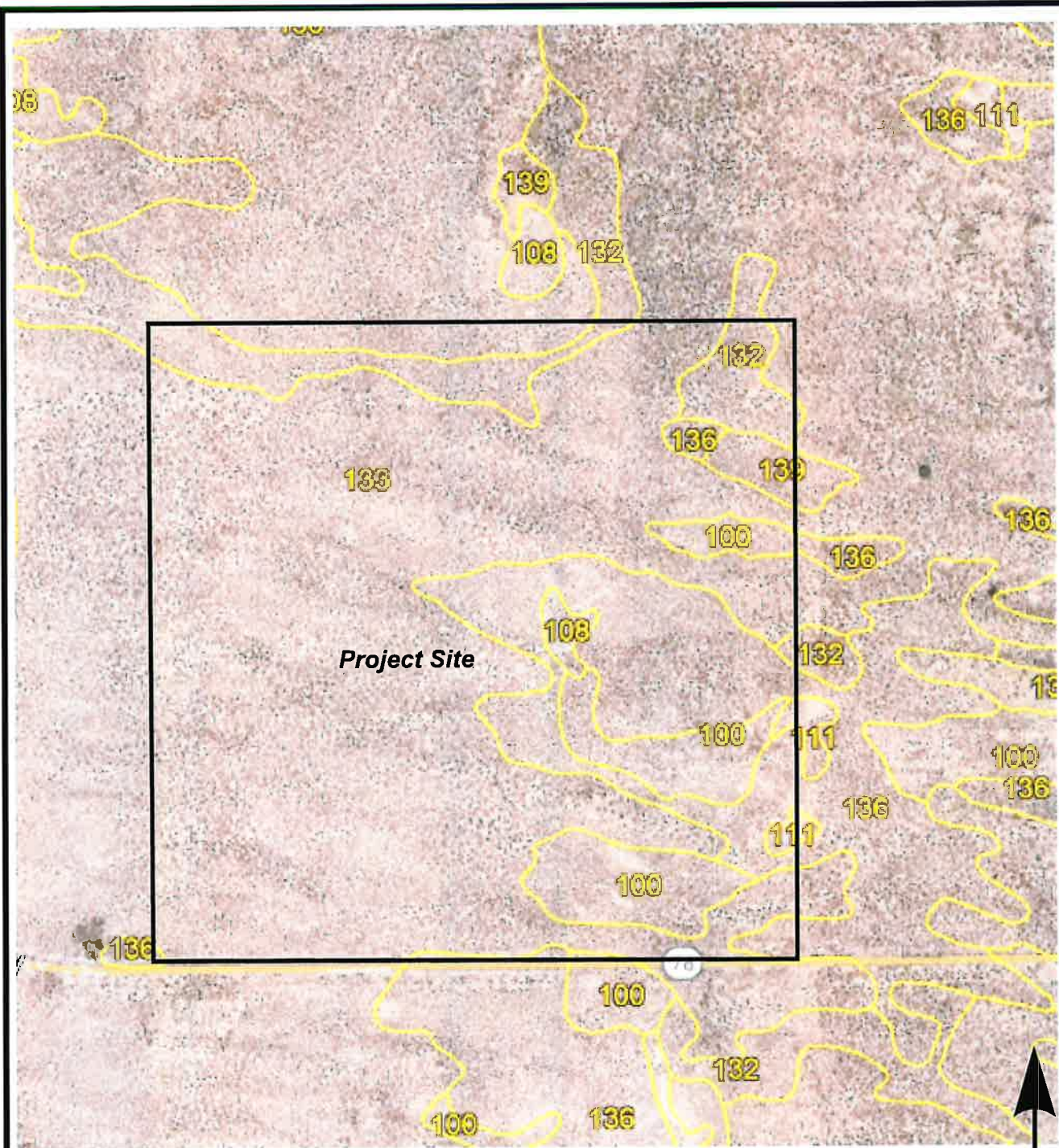
Legend


 Approximate Backhoe Test Pit Location

 Approximate Boring Location

LANDMARK
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 Project No.: LE22170

Site Map

Plate
 A-2



SWC Site Location
Lat N32.9703 Long: W-115.2806

LANDMARK
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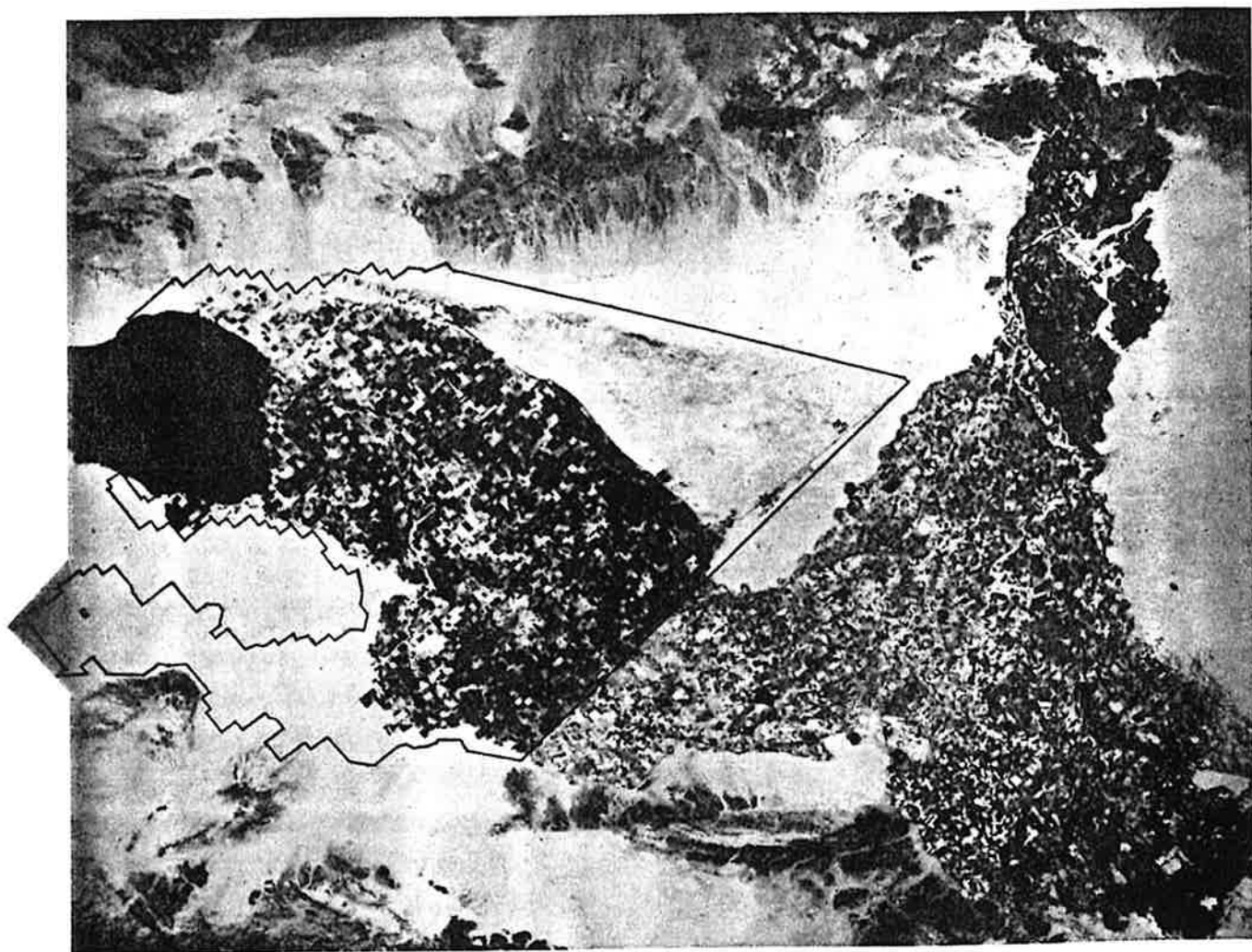
Project No.: LE22170

Soil Survey Map

Plate
A-3

Soil Survey of

**IMPERIAL COUNTY
CALIFORNIA
IMPERIAL VALLEY AREA**



United States Department of Agriculture Soil Conservation Service
in cooperation with
University of California Agricultural Experiment Station
and
Imperial Irrigation District

TABLE 11.--ENGINEERING INDEX PROPERTIES

[The symbol > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
100-----	0-13	Loamy fine sand	SM	A-2	0	100	100	75-85	10-30	---	NP
Antho	13-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	90-100	75-95	50-60	15-40	---	NP
101*:											
Antho-----	0-8	Loamy fine sand	SM	A-2	0	100	100	75-85	10-30	---	NP
	8-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	90-100	75-95	50-60	15-40	---	NP
Superstition-----	0-6	Fine sand-----	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
102*.											
Badland											
103-----	0-10	Gravelly sand---	SP, SP-SM	A-1, A-2	0-5	60-90	50-85	30-55	0-10	---	NP
Carsitas	10-60	Gravelly sand, gravelly coarse sand, sand.	SP, SP-SM	A-1	0-5	60-90	50-85	25-50	0-10	---	NP
104*											
Fluvaquents											
105-----	0-13	Clay loam-----	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
Glenbar	13-60	Clay loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
106-----	0-13	Clay loam-----	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
Glenbar	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
107*-----	0-13	Loam-----	ML, CL-ML, CL	A-4	0	100	100	100	70-80	20-30	NP-10
Glenbar	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	95-100	75-95	35-45	15-30
108-----	0-14	Loam-----	ML	A-4	0	100	100	85-100	55-95	25-35	NP-10
Holtville	14-22	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	22-60	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
109-----	0-17	Silty clay-----	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
Holtville	17-24	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-35	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
	35-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP
110-----	0-17	Silty clay-----	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
Holtville	17-24	Clay, silty clay	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-35	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	55-85	25-35	NP-10
	35-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP

See footnote at end of table.

IMPERIAL COUNTY, CALIFORNIA, IMPERIAL VALLEY AREA

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
111*: Holtville-----	0-10	Silty clay loam	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	10-22	Clay, silty clay	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
	22-60	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	65-85	25-35	NP-10
Imperial-----	0-12	Silty clay loam	CL	A-7	0	100	100	100	85-95	40-50	10-20
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
112----- Imperial	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
113----- Imperial	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
	12-60	Silty clay, clay, silty clay loam.	CH	A-7	0	100	100	100	85-95	50-70	25-45
114----- Imperial	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
115*: Imperial-----	0-12	Silty clay loam	CL	A-7	0	100	100	100	85-95	40-50	10-20
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
Glenbar-----	0-13	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
	13-60	Clay loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
116*: Imperial-----	0-13	Silty clay loam	CL	A-7	0	100	100	100	85-95	40-50	10-20
	13-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
Glenbar-----	0-13	Silty clay loam	CL	A-6, A-7	0	100	100	90-100	70-95	35-45	15-25
	13-60	Clay loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-95	35-45	15-30
117, 118----- Indio	0-12	Loam-----	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	12-72	Stratified loamy very fine sand to silt loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
119*: Indio-----	0-12	Loam-----	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	12-72	Stratified loamy very fine sand to silt loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
Vint-----	0-10	Loamy fine sand	SM	A-2	0	95-100	95-100	70-80	25-35	---	NP
	10-60	Loamy sand, loamy fine sand.	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
120*: Laveen	0-12	Loam-----	ML, CL-ML	A-4	0	100	95-100	75-85	55-65	20-30	NP-10
	12-60	Loam, very fine sandy loam.	ML, CL-ML	A-4	0	95-100	85-95	70-80	55-65	15-25	NP-10

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

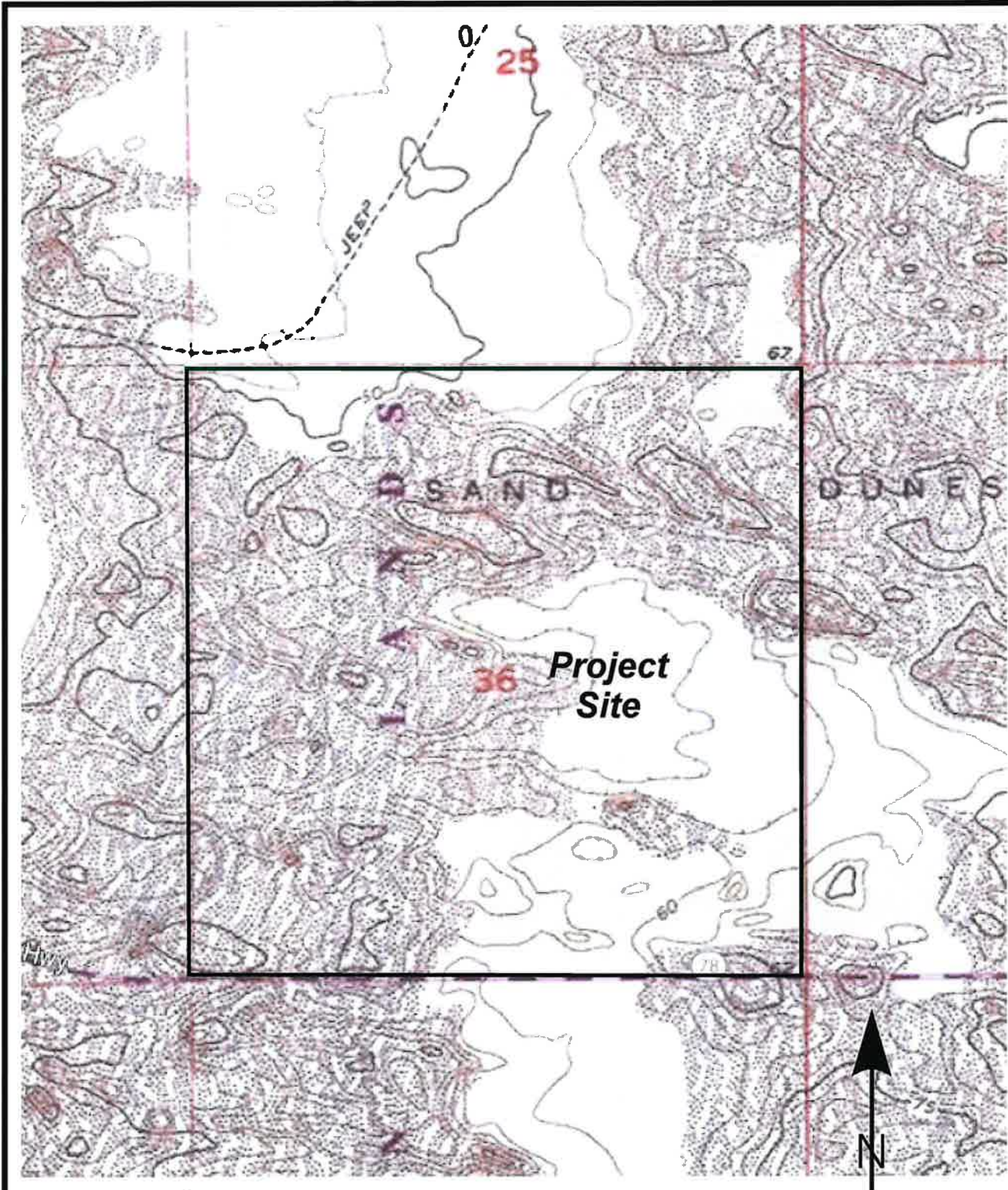
Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing .. sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
121----- Meloland	0-12	Fine sand-----	SM, SP-SM	A-2, A-3	0	95-100	90-100	75-100	5-30	---	NP
	12-26	Stratified loamy fine sand to silt loam.	ML	A-4	0	100	100	90-100	50-65	25-35	NP-10
	26-71	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-40
122----- Meloland	0-12	Very fine sandy loam.	ML	A-4	0	95-100	95-100	95-100	55-85	25-35	NP-10
	12-26	Stratified loamy fine sand to silt loam.	ML	A-4	0	100	100	90-100	50-70	25-35	NP-10
	26-71	Clay, silty clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-40
123*: Meloland-----	0-12	Loam-----	ML	A-4	0	95-100	95-100	95-100	55-85	25-35	NP-10
	12-26	Stratified loamy fine sand to silt loam.	ML	A-4	0	100	100	90-100	50-70	25-35	NP-10
	26-38	Clay, silty clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-40
	38-60	Stratified silt loam to loamy fine sand.	SM, ML	A-4	0	100	100	75-100	35-55	25-35	NP-10
Holtville-----	0-12	Loam-----	ML	A-4	0	100	100	85-100	55-95	25-35	NP-10
	12-24	Clay, silty clay	CH, CL	A-7	0	100	100	95-100	85-95	40-65	20-35
	24-36	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	55-85	25-35	NP-10
	36-60	Loamy very fine sand, loamy fine sand.	SM, ML	A-2, A-4	0	100	100	75-100	20-55	---	NP
124, 125----- Niland	0-23	Gravelly sand---	SM, SP-SM	A-2, A-3	0	90-100	70-95	50-65	5-25	---	NP
	23-60	Silty clay, clay, clay loam.	CL, CH	A-7	0	100	100	85-100	80-95	40-65	20-40
126----- Niland	0-23	Fine sand-----	SM, SP-SM	A-2, A-3	0	90-100	90-100	50-65	5-25	---	NP
	23-60	Silty clay-----	CL, CH	A-7	0	100	100	85-100	80-95	40-65	20-40
127----- Niland	0-23	Loamy fine sand	SM	A-2	0	90-100	90-100	50-65	15-30	---	NP
	23-60	Silty clay-----	CL, CH	A-7	0	100	100	85-100	80-95	40-65	20-40
128*: Niland-----	0-23	Gravelly sand---	SM, SP-SM	A-2, A-3	0	90-100	70-95	50-65	5-25	---	NP
	23-60	Silty clay, clay, clay loam.	CL, CH	A-7	0	100	100	85-100	80-100	40-65	20-40
Imperial-----	0-12	Silty clay-----	CH	A-7	0	100	100	100	85-95	50-70	25-45
	12-60	Silty clay loam, silty clay, clay.	CH	A-7	0	100	100	100	85-95	50-70	25-45
129*: Pits											
130, 131----- Rositas	0-27	Sand-----	SP-SM	A-3, A-1, A-2	0	100	80-100	40-70	5-15	---	NP
	27-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP

See footnote at end of table.

TABLE 11.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 3 inches Pet	Percentage passing sieve number--				Liquid limit Pet	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
132, 133, 134, 135- Rositas	0-9	Fine sand-----	SM	A-3, A-2	0	100	80-100	50-80	10-25	---	NP
	9-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
136----- Rositas	0-4	Loamy fine sand	SM	A-1, A-2	0	100	80-100	40-85	10-35	---	NP
	4-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
137----- Rositas	0-12	Silt loam-----	ML	A-4	0	100	100	90-100	70-90	20-30	NP-5
	12-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
138*: Rositas-----	0-4	Loamy fine sand	SM	A-1, A-2	0	100	80-100	40-85	10-35	---	NP
	4-60	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2, A-1	0	100	80-100	40-85	5-30	---	NP
Superstition-----	0-6	Loamy fine sand	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
139----- Superstition	0-6	Loamy fine sand	SM	A-2	0	100	95-100	70-85	15-25	---	NP
	6-60	Loamy fine sand, fine sand, sand.	SM	A-2	0	100	95-100	70-85	15-25	---	NP
140*: Torriorthents Rock outcrop											
141*: Torriorthents Orthids											
142----- Vint	0-10	Loamy very fine sand.	SM, ML	A-4	0	100	100	85-95	40-65	15-25	NP-5
	10-60	Loamy fine sand	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
143----- Vint	0-12	Fine sandy loam	ML, CL-ML, SM, SM-SC	A-4	0	100	100	75-85	45-55	15-25	NP-5
	12-60	Loamy sand, loamy fine sand.	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
144*: Vint-----	0-10	Very fine sandy loam.	SM, ML	A-4	0	100	100	85-95	40-65	15-25	NP-5
	10-40	Loamy fine sand	SM	A-2	0	95-100	95-100	70-80	20-30	---	NP
	40-60	Silty clay-----	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35
Indio-----	0-12	Very fine sandy loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	12-40	Stratified loamy very fine sand to silt loam.	ML	A-4	0	95-100	95-100	85-100	75-90	20-30	NP-5
	40-72	Silty clay-----	CL, CH	A-7	0	100	100	95-100	85-95	40-65	20-35

* See description of the map unit for composition and behavior characteristics of the map unit.



LANDMARK

Geo-Engineers and Geologists

Project No.: LE22170

Topographic Map

Plate
A-4

APPENDIX B

DEPTH	FIELD				LOG OF BORING NO. B-1 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5			15		SAND/SILTY SAND (SP-SM): Yellow-brown, dry, medium dense, poorly-graded (fine to medium grain sand).	88.0	0.8	Passing #200 = 10.1% c=0.09 tsf $\phi=33^\circ$
10			21					
15			26					
20			15					
25					Total Depth = 21.5' Groundwater was not encountered at the time of drilling Backfilled with excavated soil			
30								

DATE DRILLED: 9/12/22 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: ---
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-1

A

DEPTH	FIELD				LOG OF BORING NO. B-2 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5		[Dotted pattern]	20		SAND (SP): Yellow-brown, dry, medium dense, poorly-graded (fine to medium grain sand). Dense		0.8	Passing #200 = 1.0%
10			30					
15			48					
20			21		Medium dense			
25					Total Depth = 21.5' Groundwater was not encountered at the time of drilling Backfilled with excavated soil			
30								

DATE DRILLED: 9/12/22 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: ---
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-2

DEPTH	FIELD				LOG OF BORING NO. B-3 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5			24		SAND (SP): Yellow-brown, dry, medium dense, poorly-graded (fine to medium grain sand). Slightly moist	80.7	1.1	Passing #200 = 2.2% c=0.04 tsf $\phi=35^\circ$
10			36					
15			32					
20			18					
25					Total Depth = 21.5' Groundwater was not encountered at the time of drilling Backfilled with excavated soil			
30								

DATE DRILLED: 9/12/22 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: —
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-3

DEPTH	FIELD				LOG OF BORING NO. B-4 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5			13		SAND (SP): Yellow-brown, dry, loose, poorly-graded (fine to medium grain sand).			
10			25		Medium dense	100.8	0.6	Passing #200 = 1.3% c=0.11 tsf $\phi=35^\circ$
15			34		Slightly moist			
20			16					
25					Total Depth = 21.5' Groundwater was not encountered at the time of drilling Backfilled with excavated soil			
30								

DATE DRILLED: 9/12/22 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: ---
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-4

DEPTH	FIELD				LOG OF BORING NO. B-5 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)	DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)	OTHER TESTS
5			28		SAND/SILTY SAND (SP-SM): Yellow-brown, dry, medium dense, poorly-graded (fine grain sand). Slightly moist	95.2	0.8	Passing #200 = 6.8%
10			22					
15			26					
20			10					
25					Total Depth = 21.5' Groundwater was not encountered at the time of drilling Backfilled with excavated soil			
30								

DATE DRILLED: 9/12/22 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: ---
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-5

DEPTH	FIELD				LOG OF BORING NO. B-6 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5			14		SAND/SILTY SAND (SP-SM): Yellow-brown, dry, loose to medium dense, poorly-graded (fine grain sand). Medium dense	95.2	1.1	Passing #200 = 9.0% c=0.10 tsf $\phi=33^\circ$
10		28						
15		25						
20			20		SAND/SILTY SAND (SP-SM): Yellow-brown, dry, medium dense, poorly-graded (fine to medium grain sand).		0.6	Passing #200 = 2.6%
25					Total Depth = 21.5' Groundwater was not encountered at the time of drilling Backfilled with excavated soil			
30								

DATE DRILLED: 9/12/22 TOTAL DEPTH: 21.5 Feet DEPTH TO WATER: ---
LOGGED BY: P. LaBrucherie TYPE OF BIT: Hollow Stem Auger DIAMETER: 8 in.
SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-6

DEPTH	FIELD				LOG OF Test Pit No. T-1 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5					SAND/SILTY SAND (SP-SM): Yellow-brown, dry, loose to medium dense with depth, poorly-graded (fine grain sand).	98.6	0.8	Passing #200 = 9.9%
10					Total Depth = 6.5' Groundwater was not encountered at the time of excavation Backfilled with excavated soil	97.5	0.6	
15						98.4	1.1	
20								
25								
30								

DATE DRILLED: 8/30/22 TOTAL DEPTH: 6.5 Feet DEPTH TO WATER: N/A
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Backhoe Excavation DIAMETER: N/A
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170		PLATE B-7
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DEPTH	FIELD				LOG OF Test Pit No. T-2 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5					SAND/SILTY SAND (SP-SM): Yellow-brown, dry, loose, poorly-graded (fine grain sand).	85.1	0.7	Passing #200 = 8.6%
				+4.5	SILTY CLAY (CL): Light brown, dry, hard, medium plasticity.	89.2	2.1	LL=27, PI=15 % passing #200 = 67.0% <2μ = 27.6%
					SAND/SILTY SAND (SP-SM): Yellow-brown, dry, medium dense, poorly-graded (fine grain sand).	98.0	2.0	
10					Total Depth = 6.5' Groundwater was not encountered at the time of excavation Backfilled with excavated soil			
15								
20								
25								
30								

DATE DRILLED: 8/30/22 TOTAL DEPTH: 6.5 Feet DEPTH TO WATER: N/A
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Backhoe Excavation DIAMETER: N/A
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-8

DEPTH	FIELD				LOG OF Test Pit No. T-3 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5	X	[Pattern]			SILTY SAND (SM): Yellow-brown, dry, loose, with very fine grain sand.	96.9	0.4	Passing #200 = 23.9
					SAND/SILTY SAND (SP-SM): Yellow-brown, dry, medium dense, poorly-graded (fine to medium grain sand).	96.4	0.4	
					Total Depth = 6.5' Groundwater was not encountered at the time of excavation Backfilled with excavated soil	94.2	1.1	
10								
15								
20								
25								
30								

DATE DRILLED: 8/30/22 TOTAL DEPTH: 6.5 Feet DEPTH TO WATER: N/A
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Backhoe Excavation DIAMETER: N/A
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-9

DEPTH	FIELD				LOG OF Test Pit No. T-4 SHEET 1 OF 1	LABORATORY		
	SAMPLE	USCS CLASS.	BLOW COUNT	POCKET PEN. (tsf)		DESCRIPTION OF MATERIAL	DRY DENSITY (pcf)	MOISTURE CONTENT (% dry wt.)
5	X				SAND/SILTY SAND (SP-SM): Yellow-brown, dry, medium dense, poorly-graded (fine to medium grain sand). Gray-brown	95.9	1.0	Passing #200 = 6.6
5	X				Light-brown	96.6	0.9	
						95.4	1.7	Passing #200 = 6.6
10					Total Depth = 6.5' Groundwater was not encountered at the time of excavation Backfilled with excavated soil			
15								
20								
25								
30								

DATE DRILLED: 8/30/22 TOTAL DEPTH: 6.5 Feet DEPTH TO WATER: N/A
 LOGGED BY: P. LaBrucherie TYPE OF BIT: Backhoe Excavation DIAMETER: N/A
 SURFACE ELEVATION: _____ HAMMER WT.: N/A DROP: N/A

PROJECT No. LE22170



PLATE B-10

DEFINITION OF TERMS

	PRIMARY DIVISIONS	SYMBOLS	SECONDARY DIVISIONS	
Coarse grained soils More than half of material is larger than No. 200 sieve	Gravels	Clean gravels (less than 5% fines)	GW Well graded gravels, gravel-sand mixtures, little or no fines	
	More than half of coarse fraction is larger than No. 4 sieve	Gravel with fines	GP Poorly graded gravels, or gravel-sand mixtures, little or no fines	
			GM Silty gravels, gravel-sand-silt mixtures, non-plastic fines	
	Sands	Clean sands (less than 5% fines)	SW Well graded sands, gravelly sands, little or no fines	
			SP Poorly graded sands or gravelly sands, little or no fines	
		More than half of coarse fraction is smaller than No. 4 sieve	Sands with fines	SM Silty sands, sand-silt mixtures, non-plastic fines
				SC Clayey sands, sand-clay mixtures, plastic fines
	Fine grained soils More than half of material is smaller than No. 200 sieve	Silts and clays		ML Inorganic silts, clayey silts with slight plasticity
Liquid limit is less than 50%			CL Inorganic clays of low to medium plasticity, gravelly, sandy, or lean clays	
			OL Organic silts and organic clays of low plasticity	
Silts and clays		MH Inorganic silts, micaceous or diatomaceous silty soils, elastic silts		
Liquid limit is more than 50%			CH Inorganic clays of high plasticity, fat clays	
			OH Organic clays of medium to high plasticity, organic silts	
Highly organic soils		PT Peat and other highly organic soils		

GRAIN SIZES

Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		
	200	40	10	4	3/4"	3"	12"
	US Standard Series Sieve				Clear Square Openings		

Sands, Gravels, etc.	Blows/ft. *
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Clays & Plastic Silts	Strength **	Blows/ft. *
Very Soft	0-0.25	0-2
Soft	0.25-0.5	2-4
Firm	0.5-1.0	4-8
Stiff	1.0-2.0	8-16
Very Stiff	2.0-4.0	16-32
Hard	Over 4.0	Over 32

* Number of blows of 140 lb. hammer falling 30 inches to drive a 2 inch O.D. (1 3/8 in. I.D.) split spoon (ASTM D1586).

** Unconfined compressive strength in tons/s.f. as determined by laboratory testing or approximated by the Standard Penetration Test (ASTM D1586), Pocket Penetrometer, Torvane, or visual observation.

Type of Samples:

Ring Sample
 Standard Penetration Test
 Shelby Tube
 Bulk (Bag) Sample

Drilling Notes:

1. Sampling and Blow Counts
 - Ring Sampler - Number of blows per foot of a 140 lb. hammer falling 30 inches.
 - Standard Penetration Test - Number of blows per foot.
 - Shelby Tube - Three (3) inch nominal diameter tube hydraulically pushed.
2. P. P. = Pocket Penetrometer (tons/s.f.).
3. NR = No recovery.
4. GWT = Ground Water Table observed @ specified time.

LANDMARK

Geo-Engineers and Geologists

Project No. **LE22170**

Key to Logs

Plate
B-11

APPENDIX C

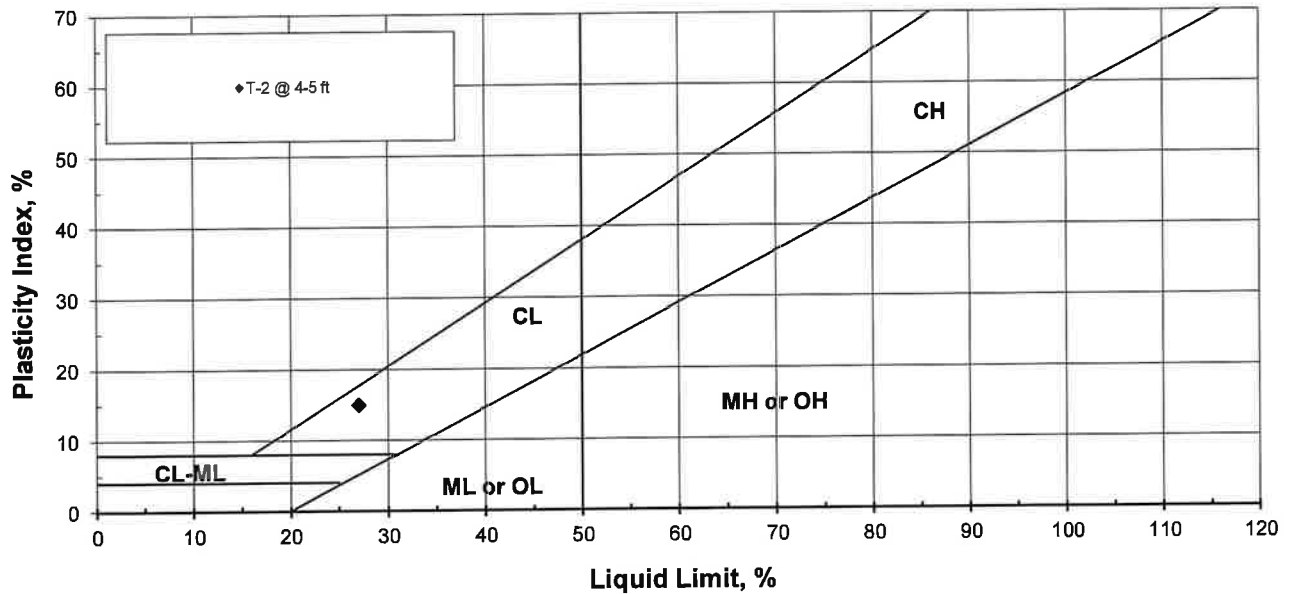
LANDMARK CONSULTANTS, INC.

CLIENT: Apex Energy Solutions, LLC
PROJECT: NorthStar 2 Solar Project, Brawley, CA
JOB No.: LE22170
DATE: 09/16/22

ATTERBERG LIMITS (ASTM D4318)

Sample Location	Sample Depth (ft)	Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)	USCS Classification
T-2	4-5	27	12	15	CL

PLASTICITY CHART



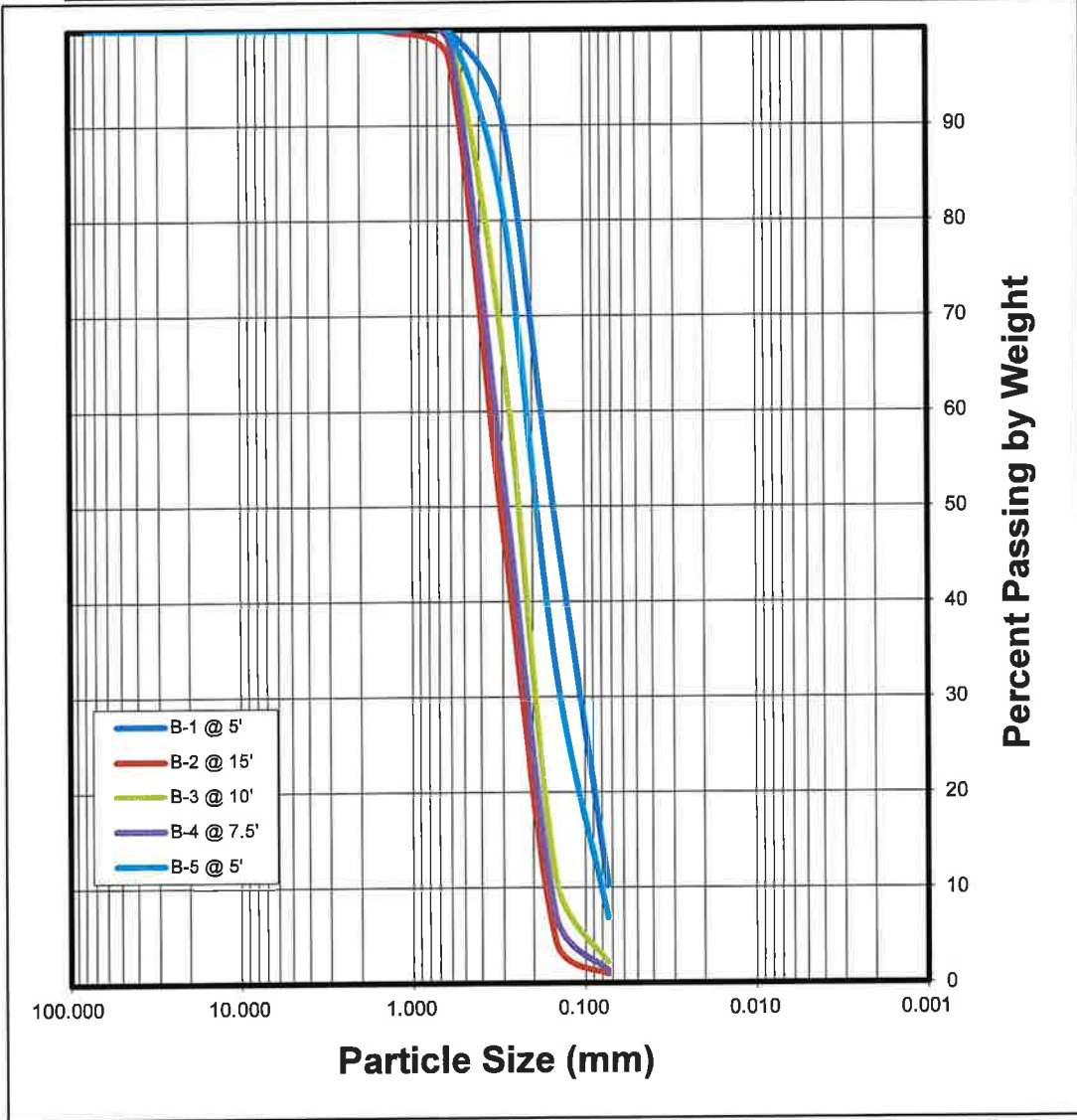
LANDMARK
Geo-Engineers and Geologists

Project No.: LE22170

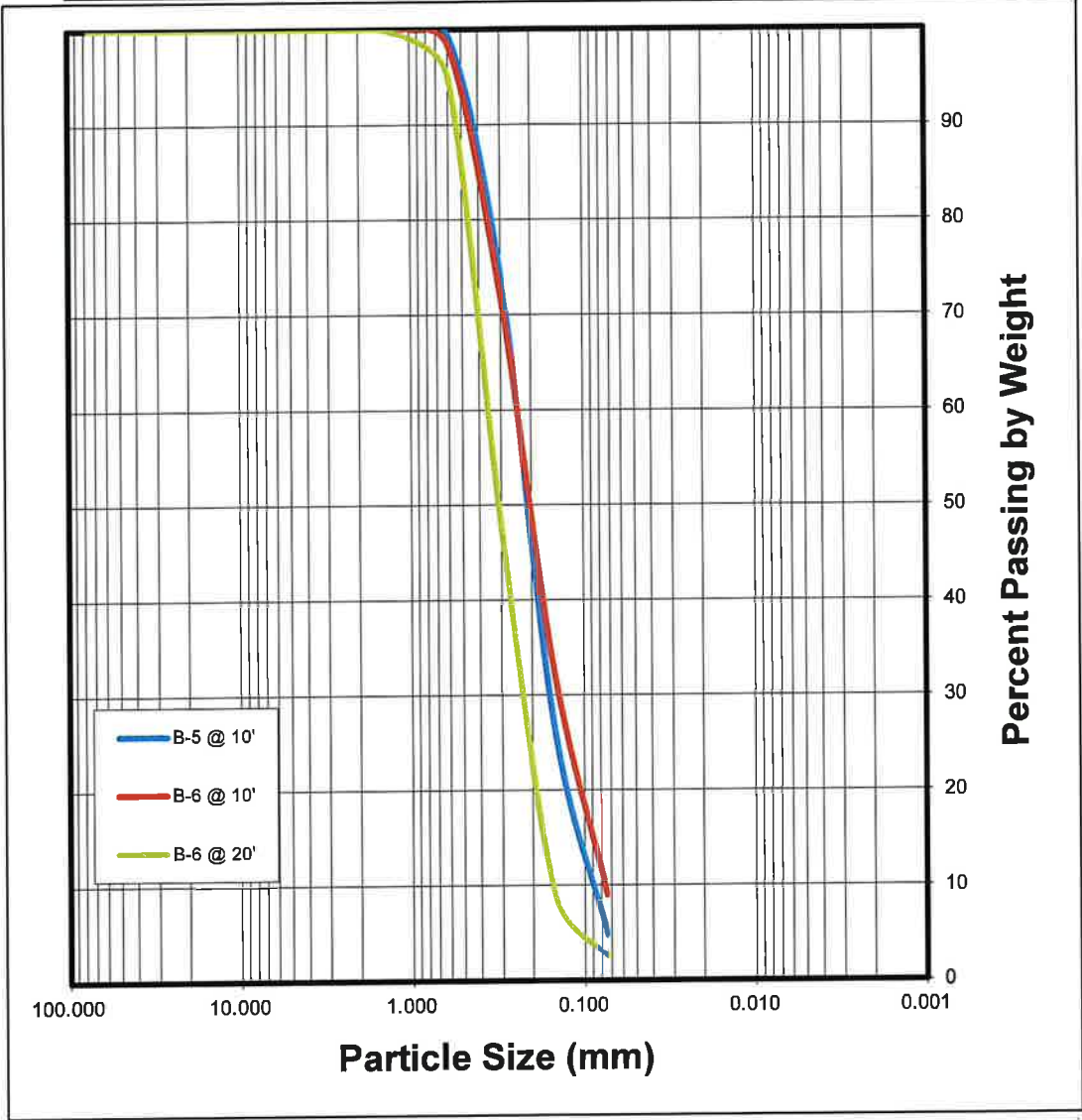
Atterberg Limits
Test Results

Plate
C-1

SIEVE ANALYSIS					HYDROMETER ANALYSIS
Gravel		Sand			Silt and Clay Fraction
Coarse	Fine	Coarse	Medium	Fine	



SIEVE ANALYSIS					HYDROMETER ANALYSIS
Gravel		Sand			Silt and Clay Fraction
Coarse	Fine	Coarse	Medium	Fine	



LANDMARK
Geo-Engineers and Geologists

Project No.: LE22170

Grain Size Analysis

Plate
C-5

LANDMARK CONSULTANTS, INC.

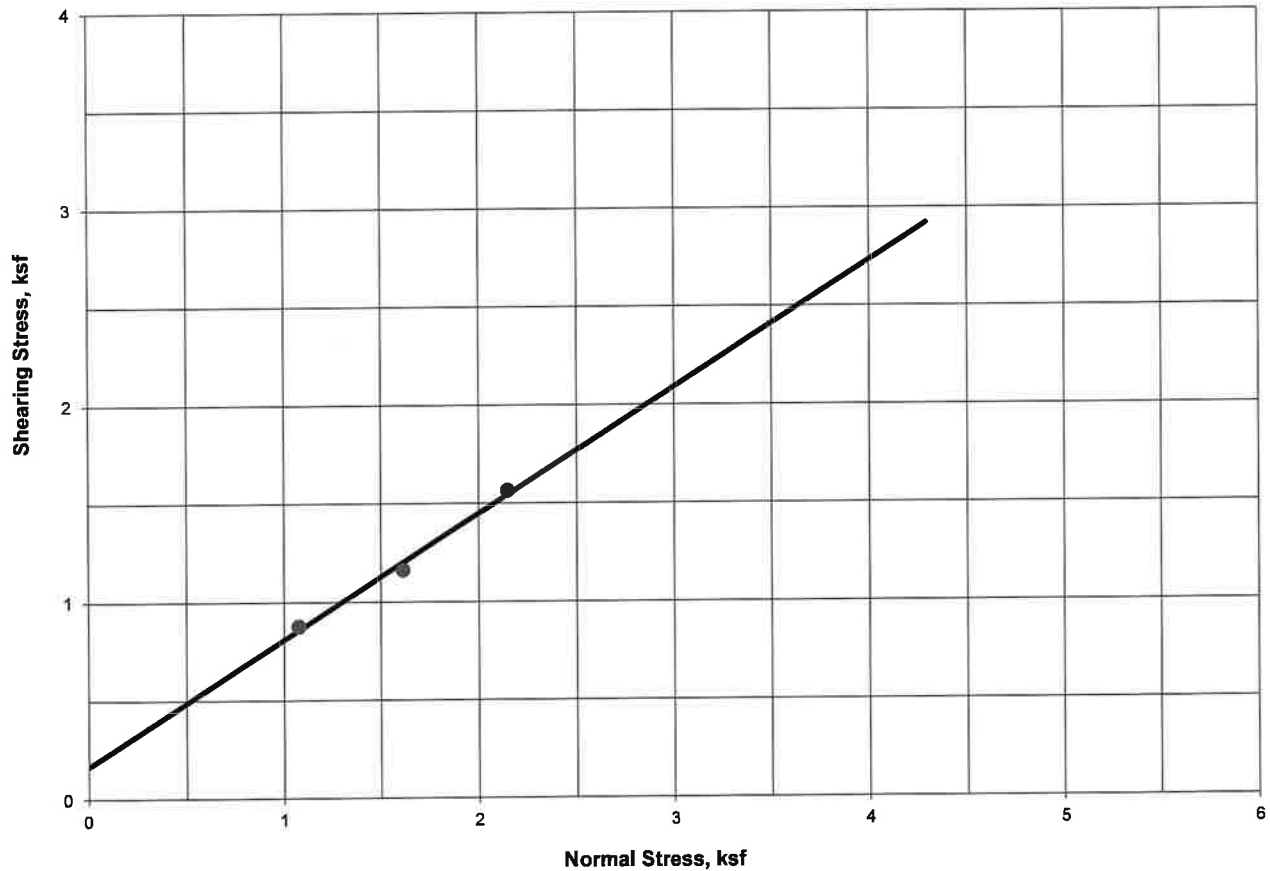
CLIENT: Apex Energy Solutions, LLC
PROJECT: NorthStar 2 Solar Project, Brawley, CA
PROJECT No: LE22170 DATE: 9/27/2017

DIRECT SHEAR TEST - INSITU (ASTM D3080)

SAMPLE LOCATION: B-1 @ 5 ft
SAMPLE DESCRIPTION: Sand/Silty Sand (SP-SM)

Angle of Internal Friction: **33°** Initial Dry Density: **88 pcf**
Cohesion: **0.17 ksf** Initial Moisture Content: **0.8%**

DIRECT SHEAR TEST RESULTS



LANDMARK CONSULTANTS, INC.

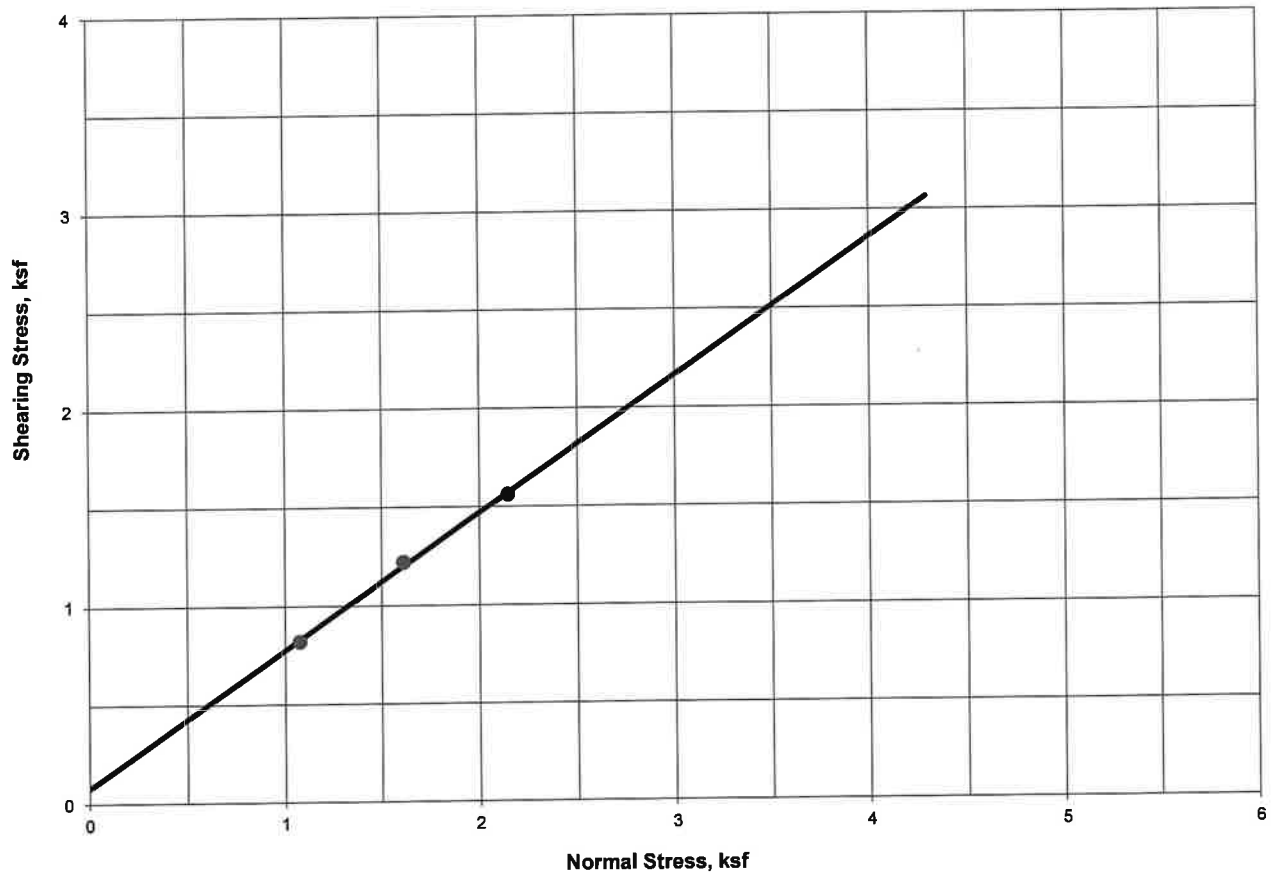
CLIENT: Apex Energy Solutions, LLC
PROJECT: NorthStar 2 Solar Project, Brawley, CA
PROJECT No: LE22170 DATE: 9/27/2017

DIRECT SHEAR TEST - INSITU (ASTM D3080)

SAMPLE LOCATION: B-3 @ 10 ft
SAMPLE DESCRIPTION: Sand (SP)

Angle of Internal Friction: 35° Initial Dry Density: 80.7 pcf
Cohesion: 0.08 ksf Initial Moisture Content: 1.1%

DIRECT SHEAR TEST RESULTS



LANDMARK CONSULTANTS, INC.

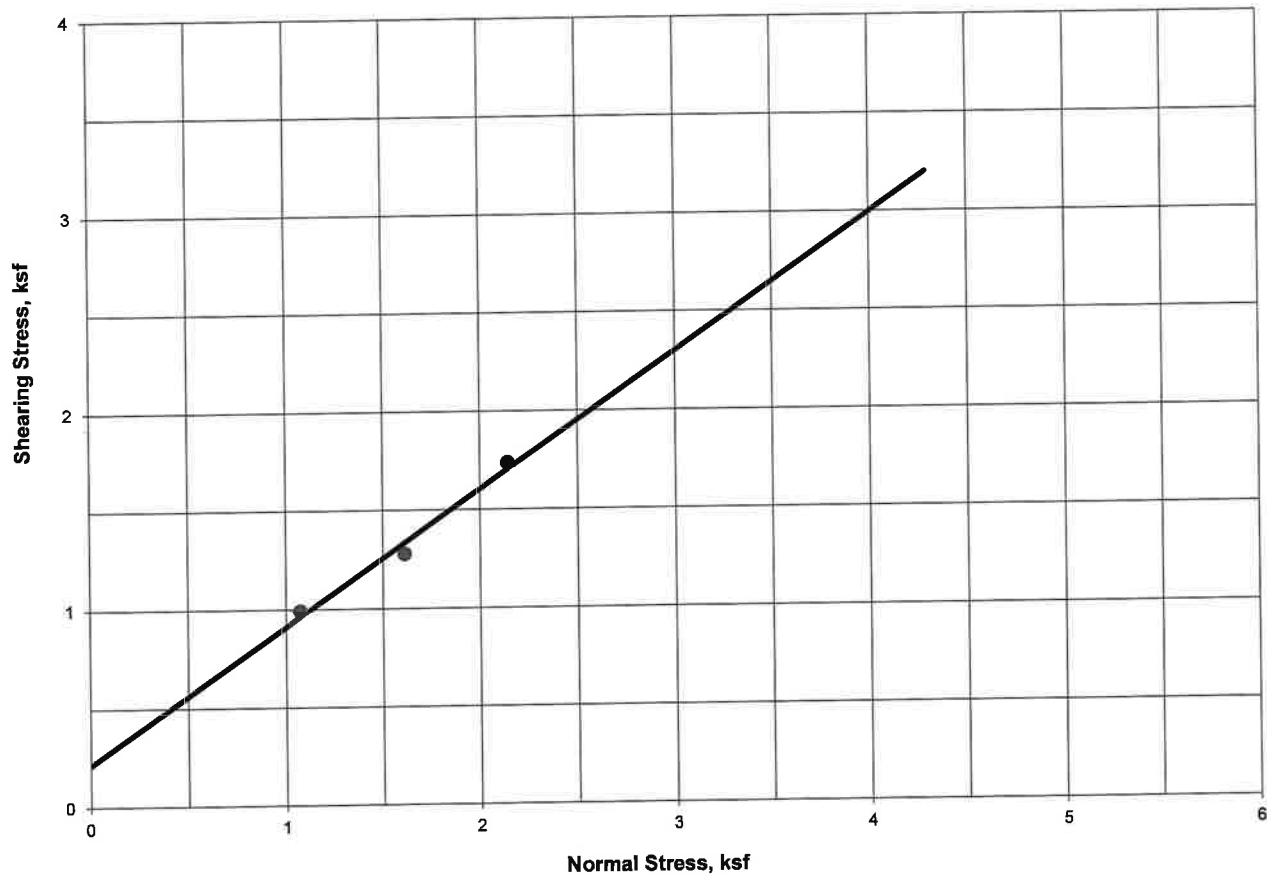
CLIENT: Apex Energy Solutions, LLC
PROJECT: NorthStar 2 Solar Project, Brawley, CA
PROJECT No: LE22170 **DATE:** 9/27/2017

DIRECT SHEAR TEST - INSITU (ASTM D3080)

SAMPLE LOCATION: B-4 @ 7.5 ft
SAMPLE DESCRIPTION: Sand (SP)

Angle of Internal Friction: 35° **Initial Dry Density:** 100.8 pcf
Cohesion: 0.22 ksf **Initial Moisture Content:** 0.6%

DIRECT SHEAR TEST RESULTS



LANDMARK CONSULTANTS, INC.

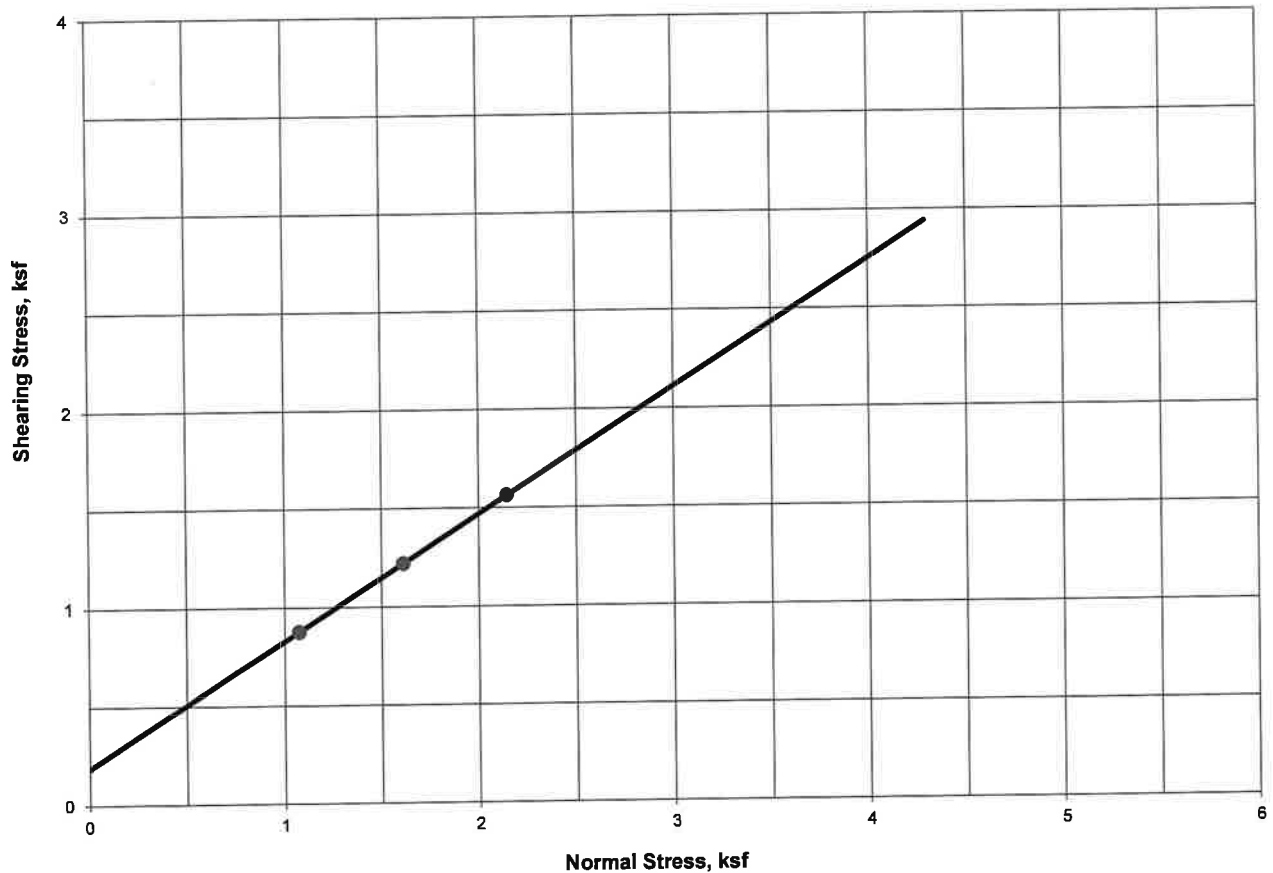
CLIENT: Apex Energy Solutions, LLC
PROJECT: NorthStar 2 Solar Project, Brawley, CA
PROJECT No: LE22170 DATE: 9/27/2017

DIRECT SHEAR TEST - INSITU (ASTM D3080)

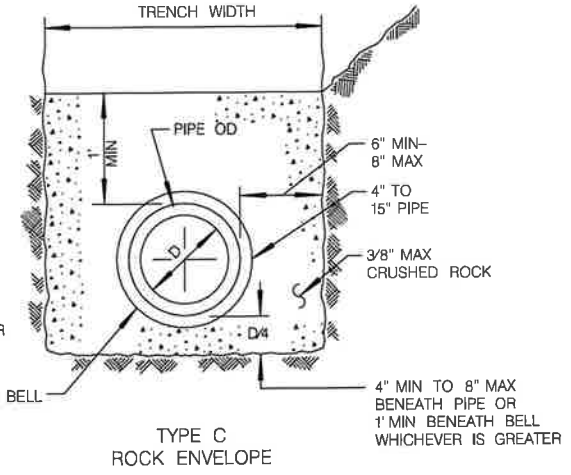
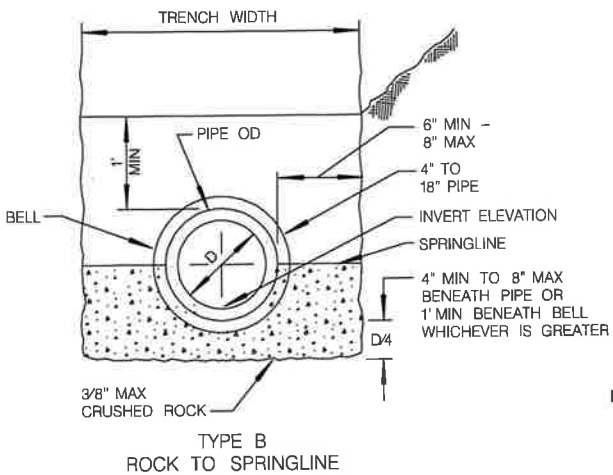
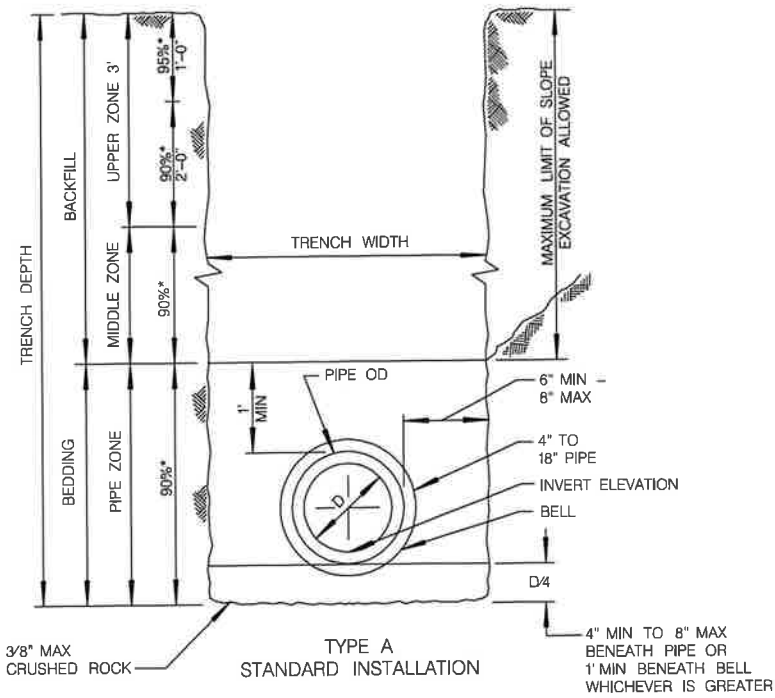
SAMPLE LOCATION: B-5 @ 10 ft
SAMPLE DESCRIPTION: Sand (SP)

Angle of Internal Friction: 33° Initial Dry Density: 95.2 pcf
Cohesion: 0.19 ksf Initial Moisture Content: 0.8%

DIRECT SHEAR TEST RESULTS



APPENDIX D



NOTES

1. FOR TRENCH RESURFACING IN IMPROVED STREETS, SEE STANDARD DRAWINGS SDG-107 AND SDG-108.
2. (*) INDICATES MINIMUM RELATIVE COMPACTION.
3. MINIMUM DEPTH OF COVER FROM THE TOP OF PIPE TO FINISH GRADE FOR PVC SDR 35 SEWER MAIN SHALL BE 5'. FOR SHALLOWER DEPTH, SPECIAL DESIGN IS REQUIRED. SEE SDS-101.
4. SEE TYPE A INSTALLATION FOR DETAILS NOT SHOWN FOR TYPES B AND C.
5. FOR PIPE SIZE ENCASEMENT LARGER THAN 15", MAXIMUM SIDE WALL CLEARANCE SHALL BE 12" OR AS SHOWN ON THE PLANS.
6. 6" METAL TAPE SHALL BE INSTALLED ABOVE PIPE 4" BELOW TRENCH CAP AND 12" BELOW FINISH GRADE IN UNIMPROVED STREETS.
7. 1" SAND CUSHION OR A 6" MINIMUM SAND CUSHION WITH 1" NEOPRENE PAD SHALL BE PLACED FOR CROSSINGS UTILITIES WHEN VERTICAL CLEARANCE IS 1' OR LESS. THE NEOPRENE PAD SHALL BE PLACED ON THE MOST FRAGILE UTILITY.

From: City of San Diego Standard Drawing SDS-110 (2016)

 Project No.: LE22170	Pipe Bedding and Trench Backfill Recommendations	Plate D-1
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APPENDIX E

**NORTHSTAR SOLAR – SITE LE22170
SOIL ASSESSMENT SUMMARY REPORT**

Presented To:

Landmark Consultants

Prepared by:

R. F. Yeager
E N G I N E E R I N G

Project No. 22136

SEPTEMBER 23, 2022

INTRODUCTION

RFYeager Engineering has completed an electrical and thermal resistivity assessment at the proposed Site LE22170 of the NorthStar Solar Project east of Orita, California. A chemical analysis of three (3) soil samples provided by Landmark was also conducted. The objective of this study is to determine the thermal and electrical resistivity, as well as to determine the corrosivity of the soil at the project site.

The location and numbering of the assessment sites is shown in Figure 1 at the end of this report. Figure 1 is based upon the site map provided by Landmark.

SCOPE

The electrical resistivity of the soil was determined by using the Wenner 4 pin method in accordance with ASTM G57 standards. Six readings were obtained and recorded for each assessment site based upon pin spacings of 40, 20, 15, 10, 5, and 2.5 feet. Readings were recorded at three locations within the Site LE22170 boundaries. All resistivity readings were recorded utilizing a Soil Resistance Meter (Megger Model DET4T2).

The soil corrosivity was evaluated based on the results of the field soil electrical resistivity assessment and the chemical analyses of the three soil samples. The soil samples were obtained by Landmark from a depth of approximately 3 feet. The samples were analyzed for pH, soluble salts (chlorides and sulfates) as well as resistivity in the saturated condition.

The thermal resistivity was determined using a Decagon KD2 Pro Portable Thermal Properties Analyzer (KD2 Pro) outfitted with the 100 mm long, 2.4 mm diameter TR-1 sensor. The KD2 Pro works in accordance with ASTM D5334-08 using a transient heat method.

CONCLUSIONS

The following are significant conclusions resulting from this assessment:

1. The results of the field electrical resistivity assessment are provided in Table 1. Resistivity readings ranging from 3,830 ohm-cm to 231,236 ohm-cm. It is noted that the dry, loose soil conditions made it challenging to obtain accurate field data. Large amounts of water had to be poured at each pin location in order to achieve sufficient electrical contact with the earth.

Table 1 – NorthStar Solar Site LE22170 Soil Electrical Resistivity Data Prepared by: RFYeager Engineering Test Date: 8.30.2022							
Test No.	Assessment Site ID	Soil Resistivity (Ohm-cm)					
		Ave. Soil Depth (feet)					
		40	20	15	10	5	2.5
1	ER-1	16086	15780	31885	56684	166605	231236
2	ER-2	18384	22214	37055	44237	69898	177138
3	ER-3	3830	5132	8905	10150	10916	28246

1 - See Figure 1 for soil assessment location relative to project site

2. The soil sample chemical analysis results were varied (see Table 2). The saturated soil resistivities of Samples 1 and 2 were 6,000 ohm-cm and 7,200 ohm-cm, respectively. The saturated soil resistivity of Sample 3, located on the northern half of the project boundaries, was much lower at 340 ohm-cm. Samples 1 and 2 contained relatively low concentrations of chlorides (i.e. less than 300 ppm) and sulfates (i.e. less than 1000 ppm). Sample 3 contained appreciably higher concentrations of soluble salts which is consistent with the measured low saturated soil resistivity. The pH readings for all soil samples are indicative of slightly alkaline soil conditions.

Table 2 – NorthStar Solar Site LE22170 Chemical Analysis Data Prepared by: RFYeager Engineering				
Sample ID ¹	Min. Soil Box Resistivity ² (ohm-cm)	Chloride Concentration ³ (ppm)	Sulfate Concentration ⁴ (ppm)	pH ⁵
1	6,000	30	60	8.3
2	7,200	30	40	8.4
3	340	850	510	8.0

1 - See Figure 1 for soil sample location. Soil sample taken from a depth of 3 feet

2 - Min. Electrical Resistivity - Miller Soil Box Method, Cal. Test 643

3 - Soluble Soil Chlorides - Cal. Test 422

4 - Soluble Sulfate Content - Cal. Test 417

5 - pH - Cal. Test 643

3. It is noted that the saturated soil box resistivities measured from the three soil samples are lower than the Wenner 4-pin resistivities taken in the field. This is likely due to the relatively dry soil conditions at the project site during the field assessment. The dryer the soil, the lesser the impact soluble soil salts have on resistivity. The saturated (minimum) soil box measurements represent the lowest, most corrosive conditions whereby the soils become fully saturated and have the lowest resistivity.

4. The soil at test site 3, located within the northern half of LE22170, is considered corrosive to buried metallic structures. This conclusion is based primarily on the low saturated soil resistivity and high soluble salt concentrations. Accordingly, supplemental corrosion control measures, such as cathodic protection, are recommended for buried metallic utilities in the vicinity of test site 3. The soil assessment results from test sites 1 and 2, near the southern edge of LE22170 is indicative of soil which is relatively non-aggressive to buried metallic structures. This conclusion is based on the high soil resistivities and low soluble salt concentrations at both assessment sites. Accordingly, supplemental corrosion control measures, such as cathodic protection, are not considered a requirement for the Project new buried metallic ferrous piping in this area. However, standard corrosion control measures (such as proper coatings and elimination of electrical contact between dissimilar metals) are warranted for long-term, corrosion-free service and to preserve future corrosion control options

5. The soil thermal resistivity is provided in Table 3. The corresponding Time vs. Temperature graphs for each assessment site is provided in Appendix A.

Table 3 – NorthStar Solar Site LE22170 Thermal Resistivity Data	
Prepared by: RFYeager Engineering	
Sample ID¹	In-Situ Thermal Resistivity² (m °CW⁻¹)
TR1	4.16
TR2	3.91
TR3	4.38

1 - See Figure 1 for sample location relative to project site
 2 – ASTM D5334-08.

DISCUSSION

Electrical Resistivity Assessment

Soil electrical resistivity (inverse of conductivity) measures the ability of an electrolyte (soil) to support electrical current flow. The most common method of measuring soil electrical resistivity is the Wenner 4-Pin Method which uses four pins (electrodes) that are driven into the earth and equally spaced apart in a straight line. The Wenner 4-pin Method provides an average resistivity of a hemisphere (essentially) of soil whose diameter is approximately equal to the pin spacing. For example, the electrical resistivity value obtained with the pins spaced at 5 feet apart is the average resistivity of a hemisphere of soil from the surface to a depth of 5 feet. By taking readings at different pin spacings (or depths), average soil electrical resistivity conditions can be obtained within areas at, above, and below trench zones.

Corrosion versus Resistivity

Corrosion is an electrochemical process, whereby the reaction rate is largely dependent upon the electrical conductivity of the surrounding electrolyte. Accordingly, the lower the electrical resistivity, then the greater the current flow and the greater the corrosion rate assuming all other factors are equal.

One common relationship between corrosivity and soil electrical resistivity used by corrosion engineers is provided on the following page.

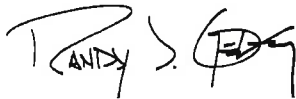
<u>Corrosivity</u>	<u>Electrical Resistivity</u>
Very Corrosive	0-1000 ohm-cm
Corrosive	1001-2000 ohm-cm
Fairly Corrosive	2001-5000 ohm-cm
Moderately Corrosive	5001-12000 ohm-cm
Slightly Corrosive	12001-30000 ohm-cm
Relatively Non-Corrosive	Greater than 30001 ohm-cm

Thermal Resistivity Assessment

Thermal resistivity of the soil was measured at three locations selected by Landmark within the LE22170 Project site. Assessments were conducted within test pits at a depth of approximately 2 feet. At each site, the thermal resistivity was measured three times with the average provided in Table 3. The assessment was conducted in general accordance with the standard method

ASTM D5334-08 which calculates thermal resistivity by monitoring the dissipation of heat from a line heat source. The field assessment consists of inserting a thermal sensor into the soil with a known current and voltage applied. The corresponding temperature rise in the soil over a period of time is recorded. The thermal resistivity is obtained from an analysis of the time series temperature data during the heating and cooling cycle of the sensor. For purposes of this report, the thermal resistivity values are provided as “data only” in order to assist others in the project design.

Thank you for this opportunity to provide these corrosion engineering services. Please contact me if you have any questions.



Randy J. Geving, PE
Registered Professional Engineer – Corrosion No.1060
RGeving@RFYeager.com, 760.715.2358



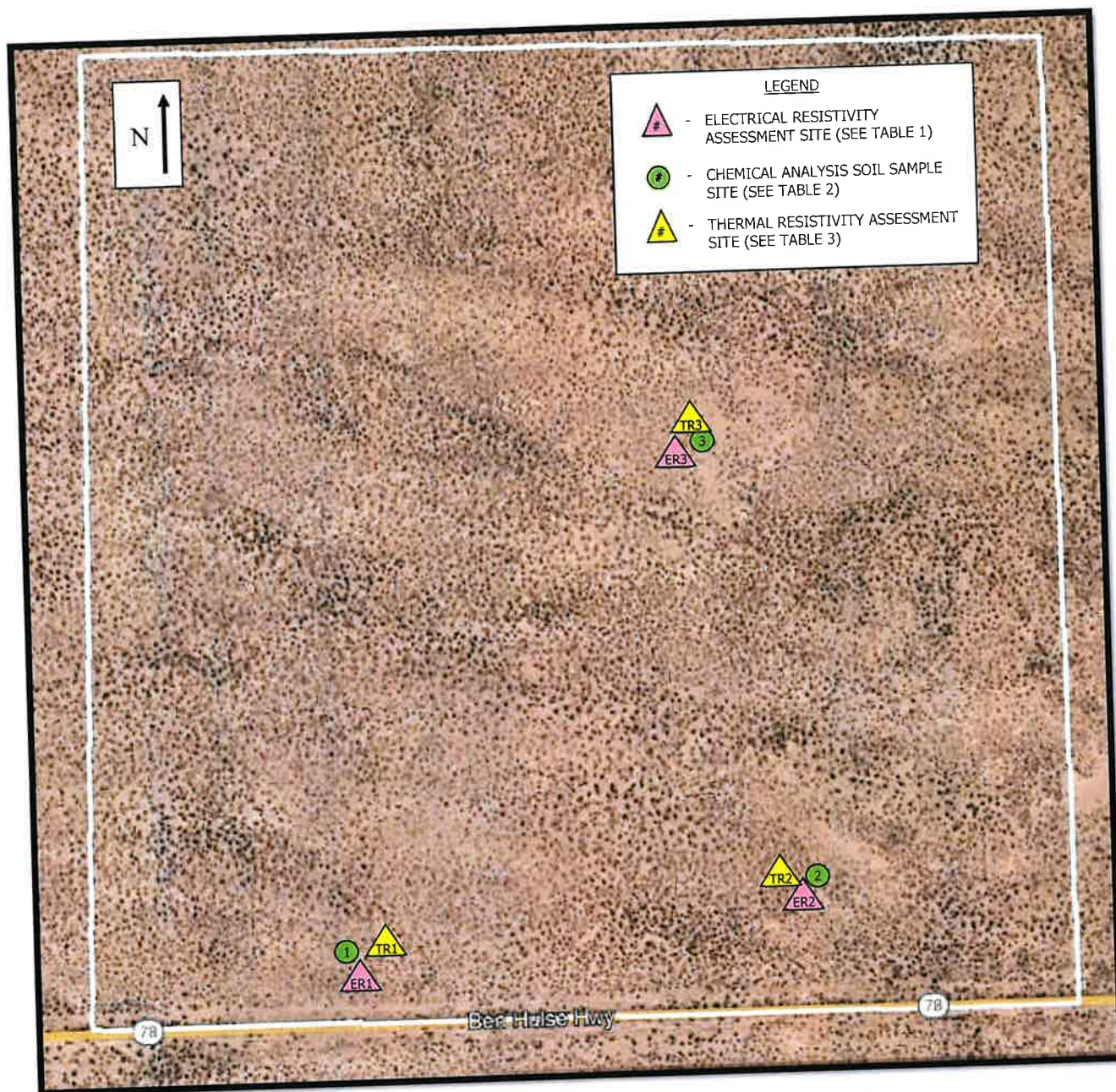
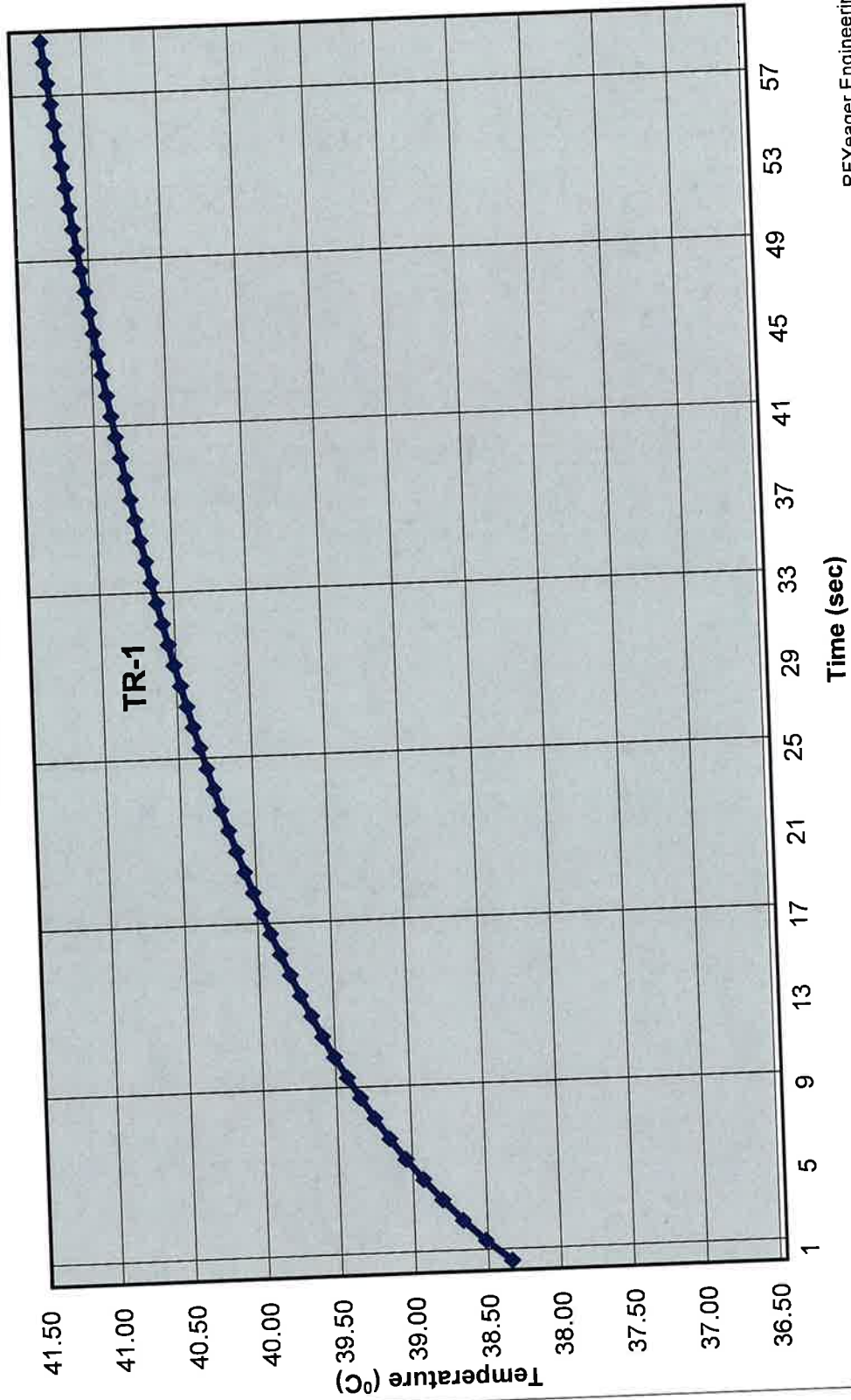


Figure 1 – NorthStar Solar Site LE22170 Assessment Locations

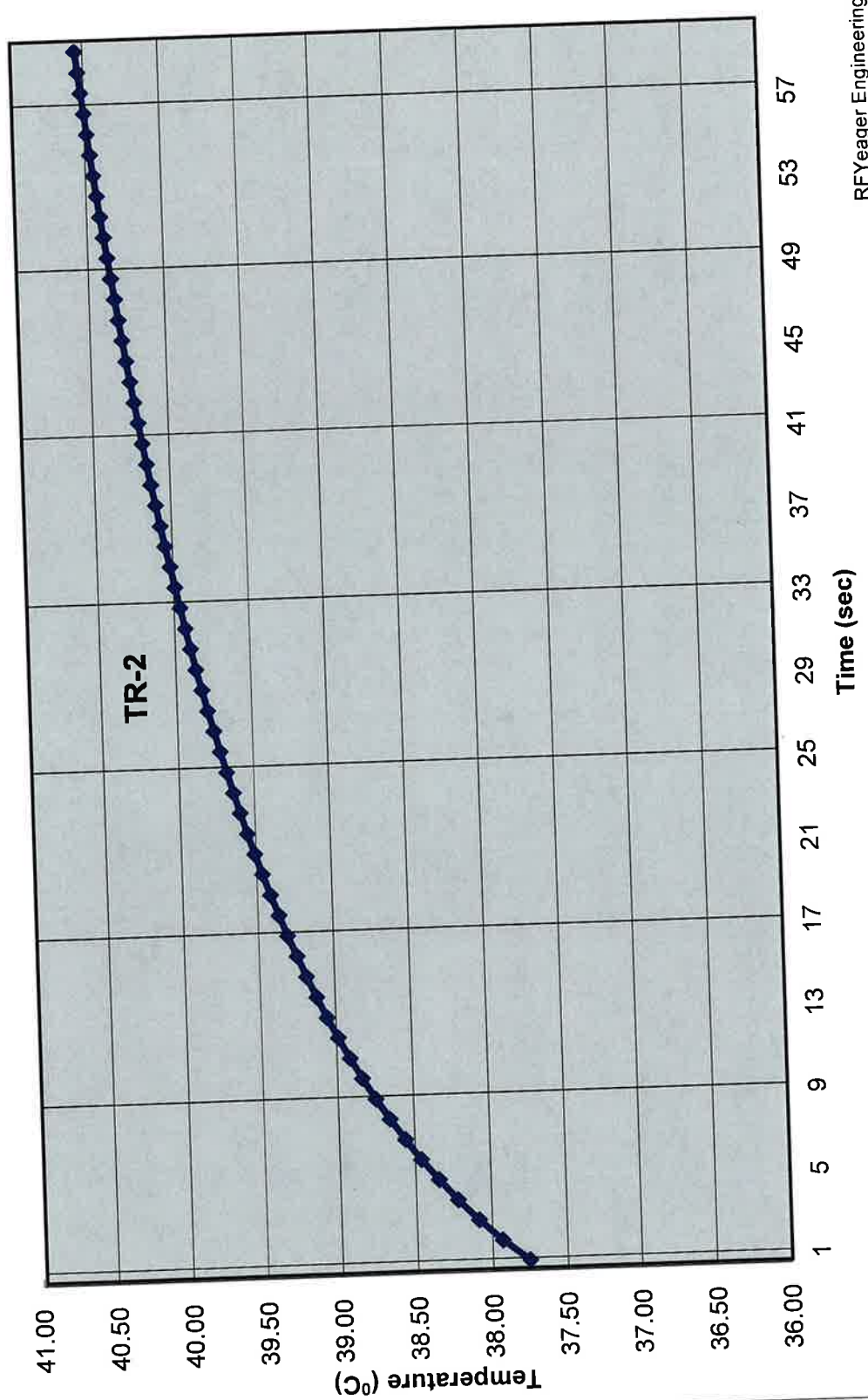
APPENDIX A
THERMAL RESISTIVITY
TEMPERATURE VS. TIME GRAPHS

NorthStar Solar - Site LE22170
Thermal Resistivity Temperature vs. Time Graph
Test Date: August 30, 2022



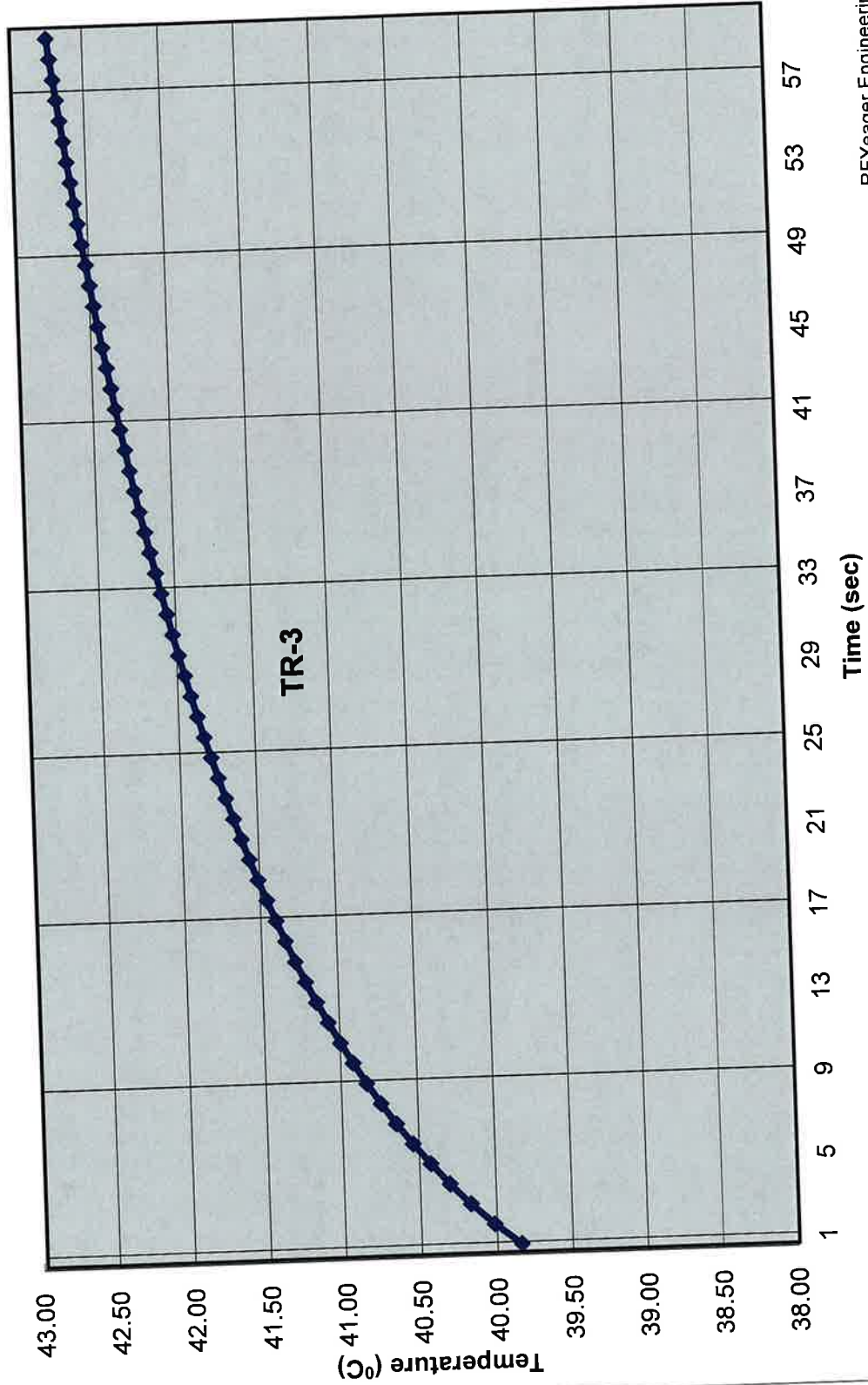
RFYeager Engineering

NorthStar Solar - Site LE22170
Thermal Resistivity Temperature vs. Time Graph
Test Date: August 30, 2022



RFYeager Engineering

NorthStar Solar - Site LE22170
Thermal Resistivity Temperature vs. Time Graph
Test Date: August 30, 2022



RFYeager Engineering

APPENDIX F

REFERENCES

- American Concrete Institute (ACI), 2013, ACI Manual of Concrete Practice 302.1R-04
- American Society of Civil Engineers (ASCE), 2010, Minimum Design Loads for Buildings and Other Structures: ASCE Standard 7-10.
- California Building Standards Commission, 2017, 2016 California Building Code. California Code of Regulations, Title 24, Part 2, Vol. 2 of 2.
- Caltrans, 2012, Highway Design Manual.
- California Division of Mines and Geology (CDMG), 1996, California Fault Parameters: available at <http://www.consrv.ca.gov/dmg/shezp/fltindex.html>.
- California Geological Survey (CGS), 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A, 98p.
- California Geological Survey (CGS), 2018, Fault Activity Map of California <http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html#>.
- California Geological Survey (CGS), 2018, Alquist-Priolo Earthquake Fault Zone Maps. <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps>
- Cetin, K. O., Seed, R. B., Der Kiureghian, A., Tokimatsu, K., Harder, L. F., Jr., Kayen, R. E., and Moss, R. E. S., 2004, Standard penetration test-based probabilistic and deterministic assessment of seismic soil liquefaction potential: ASCE JGGE, Vol., 130, No. 12, p. 1314-1340.
- Geologismiki, 2017, CLiq Computer Program, www.geologismiki.gr
- Ishihara, K. (1985), Stability of natural deposits during earthquakes, Proc. 11th Int. Conf. On Soil Mech. And Found. Engrg., Vol. 1, A. A. Balkema, Rotterdam, The Netherlands, 321-376.
- Jones, A. L., 2003, An Analytical Model and Application for Ground Surface Effects from Liquefaction, PhD. Dissertation, University of Washington, 362 p.
- McCrink, T. P., Pridmore, C. L., Tinsley, J. C., Sickler, R. R., Brandenburg, S. J., and Stewart, J. P., 2011, Liquefaction and Other Ground Failures in Imperial County, California, from the April 4, 2010, El Mayor—Cucapah Earthquake, CGS Special Report 220, USGS Open File Report 2011-1071, 84 p.

- Morton, P. K., 1977, Geology and mineral resources of Imperial County, California: California Division of Mines and Geology, County Report No. 7, 104 p.
- Post-Tensioning Institute (PTI), 2007a, Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils (3rd Edition).
- Post-Tensioning Institute (PTI), 2007b, Standard Requirements for Design of Shallow Post-Tensioned Concrete Foundations on Expansive Soils (2nd Edition).
- Robertson, P. K., 2014, Seismic liquefaction CPT-based methods: EERI 1st Workshop on Geotechnical Earthquake Engineering – Liquefaction Evaluation, Mapping, Simulation and Mitigation. UC San Diego Campus, 10/12/2014.
- Robertson, P. K. and Wride, C. E., 1997, Cyclic Liquefaction and its Evaluation based on the SPT and CPT, Proceeding of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils, NCEER Technical Report 97-0022, p. 41-88.
- Rymer, M.J., Treiman, J.A., Kendrick, K.J., Lienkaemper, J.J., Weldon, R.J., Bilham, R., Wei, M., Fielding, E.J., Hernandez, J.L., Olson, B.P.E., Irvine, P.J., Knepprath, N., Sickler, R.R., Tong, .X., and Siem, M.E., 2011, Triggered surface slips in southern California associated with the 2010 El Mayor-Cucapah, Baja California, Mexico, earthquake: U.S. Geological Survey Open-File Report 2010-1333 and California Geological Survey Special Report 221, 62 p., available at <http://pubs.usgs.gov/of/2010/1333/>.
- U.S. Geological Survey (USGS), 1990, The San Andreas Fault System, California, Professional Paper 1515.
- U.S. Geological Survey (USGS), 2017, US Seismic Design Maps Web Application, available at <http://geohazards.usgs.gov/designmaps/us/application.php>
- Wire Reinforcement Institute (WRI/CRSI), 2003, Design of Slab-on-Ground Foundations, Tech Facts TF 700-R-03, 23 p.
- Youd, T. L., 2005, Liquefaction-induced flow, lateral spread, and ground oscillation, GSA Abstracts with Programs, Vol. 37, No. 7, p. 252.
- Youd, T. L. and Garris, C. T., 1995, Liquefaction induced ground surface disruption: ASCE Geotechnical Journal, Vol. 121, No. 11.
- Zimmerman, R. P., 1981, Soil survey of Imperial County, California, Imperial Valley Area: U.S. Dept. of Agriculture Soil Conservation Service, 112 p.

PVsyst - Simulation report

Grid-Connected System

Project: Northstar 2

Variant: NorthStar 2 186.9 MWdc 130 MWac 46%GCR

Unlimited Trackers with backtracking

System power: 186.9 MWp

Orita - United States

Author

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Project: Northstar 2

Variant: NorthStar 2 186.9 MWdc 130 MWac 46%GCR

PVsyst V7.2.11

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Project summary

Geographical Site	Situation	Project settings
Orita	Latitude 32.98 °N	Albedo 0.20
United States	Longitude -115.28 °W	
	Altitude 17 m	
	Time zone UTC-8	
Meteo data		
Orita		
NREL NSRDB Typ. Met. Year PSMv3_1998 to 2016 - TMY		

System summary

Grid-Connected System	Unlimited Trackers with backtracking	
PV Field Orientation	Tracking algorithm	Near Shadings
Orientation	Astronomic calculation	No Shadings
Tracking horizontal axis	Backtracking activated	
System information		
PV Array	Inverters	
Nb. of modules 289800 units	Nb. of units 52 units	
Pnom total 186.9 MWp	Pnom total 130.0 MWac	
	Pnom ratio 1.438	
User's needs		
Unlimited load (grid)		

Results summary

Produced Energy	404938 MWh/year	Specific production	2166 kWh/kWp/year	Perf. Ratio PR	76.01 %
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General parameters

Grid-Connected System		Unlimited Trackers with backtracking	
PV Field Orientation		Tracking algorithm	Backtracking strategy
Orientation		Astronomic calculation	Nb. of trackers 10 units
Tracking horizontal axis		Backtracking activated	Unlimited trackers
			Sizes
			Tracker Spacing 5.18 m
			Collector width 2.38 m
			Ground Cov. Ratio (GCR) 45.9 %
			Left inactive band 0.02 m
			Right inactive band 0.02 m
			Phi min / max. -/+ 52.0 °
			Backtracking limit angle
			Phi limits +/- 62.0 °
Models used			
Transposition	Perez		
Diffuse	Imported		
Circumsolar	separate		
Horizon		Near Shadings	User's needs
Free Horizon		No Shadings	Unlimited load (grid)
Bifacial system			
Model	2D Calculation unlimited trackers		
Bifacial model geometry		Bifacial model definitions	
Tracker Spacing	5.18 m	Ground albedo	0.30
Tracker width	2.42 m	Bifaciality factor	70 %
GCR	46.7 %	Rear shading factor	5.0 %
Axis height above ground	2.10 m	Rear mismatch loss	10.0 %
		Shed transparent fraction	0.0 %

PV Array Characteristics

PV module		Inverter	
Manufacturer	Astronergy	Manufacturer	Sungrow
Model	CHSM66M(DG)F-BH-645	Model	SG2500U_CEC Efficiency
(Custom parameters definition)		(Custom parameters definition)	
Unit Nom. Power	645 Wp	Unit Nom. Power	2500 kWac
Number of PV modules	289800 units	Number of inverters	52 units
Nominal (STC)	186.9 MWp	Total power	130000 kWac
Modules	9660 Strings x 30 In series	Operating voltage	800-1300 V
At operating cond. (50°C)		Pnom ratio (DC:AC)	1.44
Pmpp	171.1 MWp		
U mpp	1018 V		
I mpp	167977 A		
Total PV power		Total inverter power	
Nominal (STC)	186921 kWp	Total power	130000 kWac
Total	289800 modules	Number of inverters	52 units
Module area	900221 m ²	Pnom ratio	1.44
Cell area	843492 m ²		



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Array losses

Array Soiling Losses		Thermal Loss factor		DC wiring losses				
Loss Fraction	4.0 %	Module temperature according to irradiance		Global array res.	0.100 mΩ			
		Uc (const)	29.0 W/m²K	Loss Fraction	1.5 % at STC			
		Uv (wind)	0.0 W/m²K/m/s					
LID - Light Induced Degradation		Module Quality Loss		Module mismatch losses				
Loss Fraction	2.0 %	Loss Fraction		Loss Fraction				
		-0.8 %		2.0 % at MPP				
Strings Mismatch loss								
Loss Fraction	0.1 %							
IAM loss factor								
Incidence effect (IAM): User defined profile								
0°	40°	50°	60°	70°	75°	80°	85°	90°
1.000	1.000	1.000	1.000	1.000	0.984	0.949	0.830	0.000

System losses

Unavailability of the system	
Time fraction	1.4 %
	5.0 days,
	2 periods

AC wiring losses

Inv. output line up to MV transfo	
Inverter voltage	550 Vac tri
Loss Fraction	1.50 % at STC
Inverter: SG2500U_CEC Efficiency	
Wire section (52 Inv.)	Copper 52 x 3 x 2500 mm²
Average wires length	171 m
MV line up to Injection	
MV Voltage	230 kV
Wires	Copper 3 x 1000 mm²
Length	2000 m
Loss Fraction	0.01 % at STC

AC losses in transformers

MV transfo	
Grid voltage	230 kV
Operating losses at STC	
Nominal power at STC	183402 kVA
Iron loss (24/24 Connexion)	183.40 kW
Loss Fraction	0.10 % at STC
Coils equivalent resistance	3 x 0.02 mΩ
Loss Fraction	1.00 % at STC



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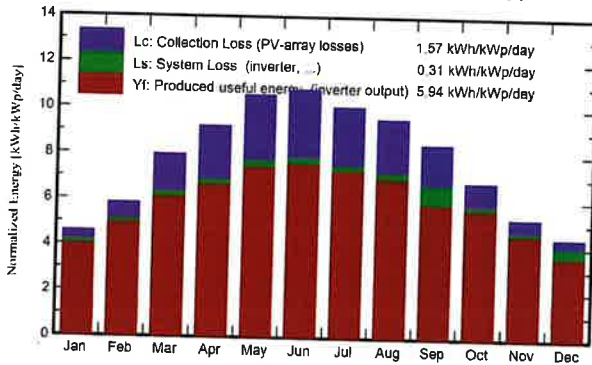
Main results

System Production

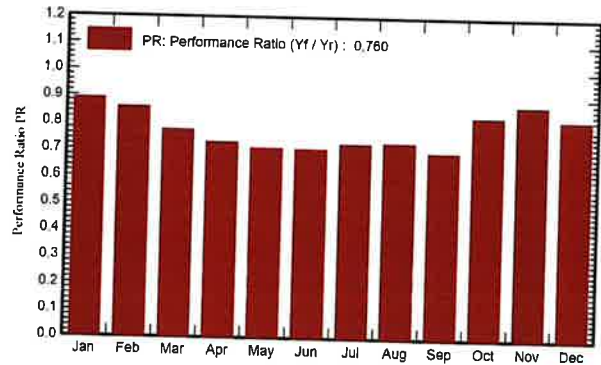
Produced Energy 404938 MWh/year

Specific production 2166 kWh/kWp/year
Performance Ratio PR 76.01 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor kWh/m ²	DiffHor kWh/m ²	T_Amb °C	GlobInc kWh/m ²	GlobEff kWh/m ²	EArray MWh	E_Grid MWh	PR ratio
January	106.8	29.93	13.53	142.0	134.2	24512	23638	0.891
February	123.7	34.57	14.56	163.0	154.2	27119	26128	0.857
March	186.9	44.04	16.94	246.8	233.8	37092	35713	0.774
April	213.4	50.84	21.90	276.2	261.7	39029	37588	0.728
May	253.2	54.60	24.32	328.0	311.2	45092	43435	0.708
June	251.1	47.44	31.16	324.8	308.2	44445	42822	0.705
July	243.3	56.12	33.41	312.3	296.0	43954	42357	0.726
August	227.5	44.09	34.39	296.4	281.1	42078	40536	0.732
September	191.3	40.32	30.11	253.7	240.5	37806	33040	0.697
October	158.4	36.06	24.88	211.6	200.5	34093	32848	0.830
November	117.5	27.42	18.49	158.2	149.7	26749	25793	0.872
December	101.0	26.62	11.70	137.1	129.6	23932	21040	0.821
Year	2174.0	492.05	22.99	2850.1	2700.7	425902	404938	0.760

Legends

GlobHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_Grid	Energy injected into grid
T_Amb	Ambient Temperature	PR	Performance Ratio
GlobInc	Global incident in coll. plane		
GlobEff	Effective Global, corr. for IAM and shadings		



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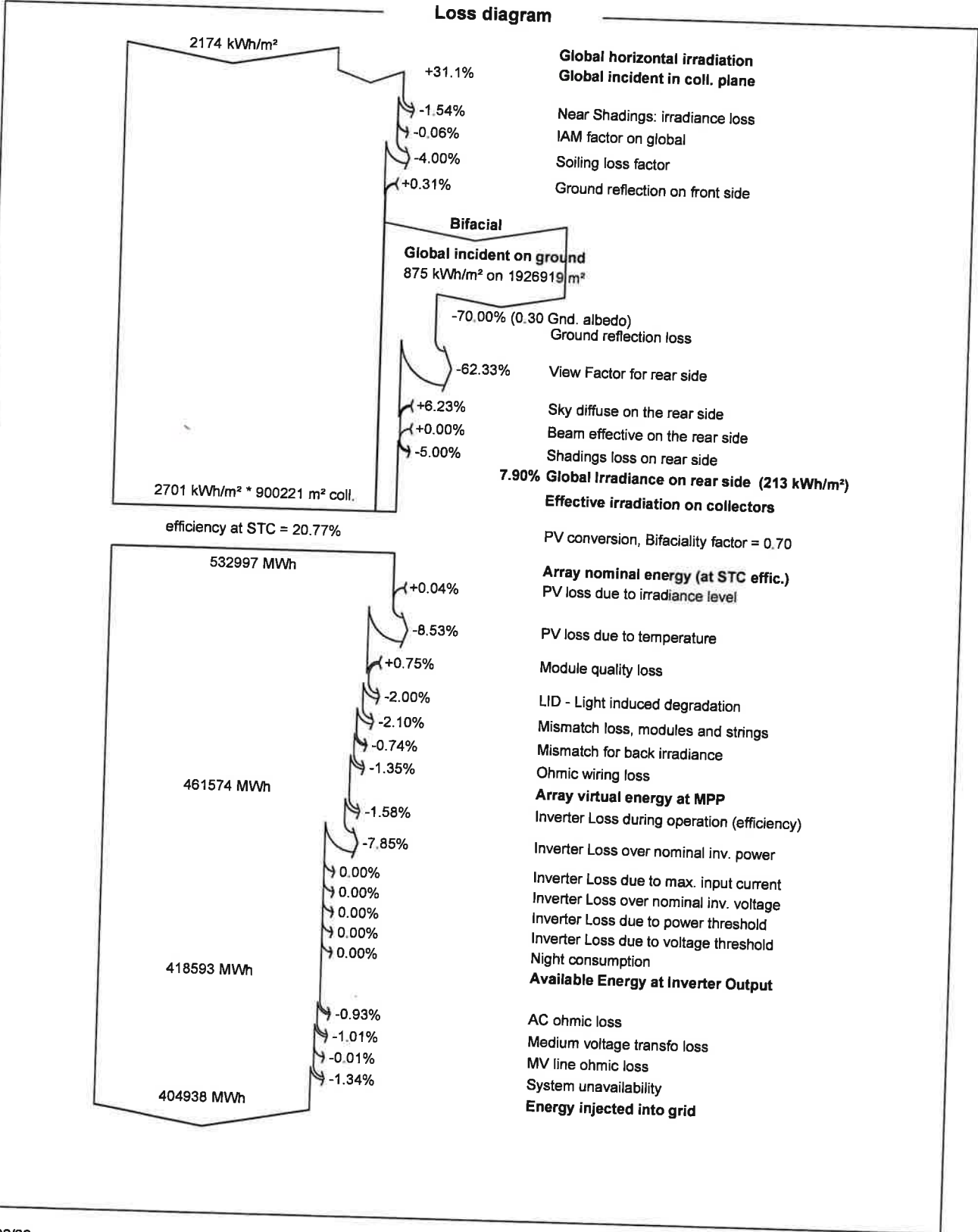
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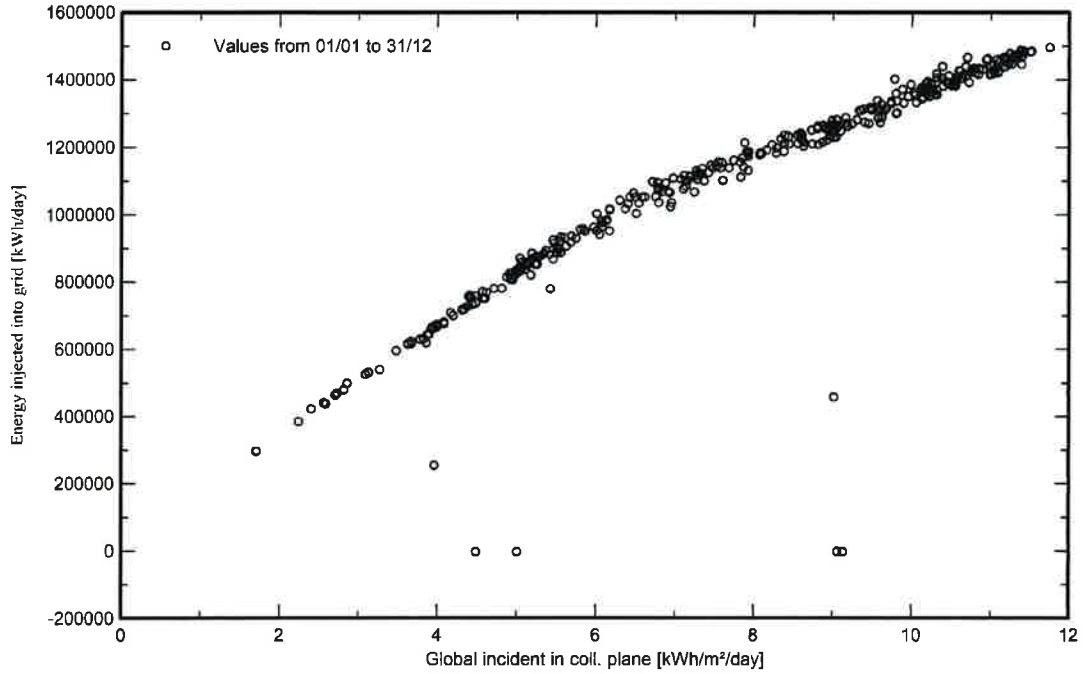
Loss diagram





Special graphs

Daily Input/Output diagram



System Output Power Distribution

